COLUMBIA LIBRARIES OFFSITE
HEALTH SCIENCES RESTRICTED
HR02157780

SERIAL v. 20

P 1908

Columbia University
in the City of New York

College of Physicians and Surgeons

Reference Library

Digitized by the Internet Archive
in 2014

https://archive.org/details/pediatrics2019unse

Vol. XX. No. 1 NEW YORK, JANUARY, 1908 $2.00 a Year

PEDIATRICS

FREDERIC W. LOUGHRAN, M.D. Editor
New York

CONTENTS ON PAGE IV.

When You Prescribe

PAPĀYANS BELL

For Indigestion

you remove the indigestion and—Trial is Proof. In bottles of one hundred tablets—to prevent substitution—at all druggists. Prescribe two tablets, with water as necessary. They contain only Papain, Charcoal, Soda and Flavoring.

Bell & Company (Inc.)
New York, Chicago, Orangeburg, N. Y.

PUBLISHED MONTHLY BY F. M. CROSSETT CO., 156 FIFTH AVE., NEW YORK, N. Y.
ENTERED AS SECOND CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.
COPYRIGHTED, 1907, BY F. M. CROSSETT CO.

Mulford's
Diphtheria Antitoxin
Globulin

is a highly concentrated and purified Antitoxin

Prepared by our new process it possesses the following advantages:

1. The Antitoxin Globulin is now precipitated from the non-antitoxic bodies by means of magnesium sulphate, since this salt is far less toxic and less irritating than the ammonium sulphate heretofore employed.

2. By eliminating inert substances it is further concentrated to a very small bulk.

3. By prolonged dialysis it is purified from the inorganic salts.

4. It conforms to a normal (physiologic) salt solution, therefore is less liable to produce irritation and probably reduces the percentage of serum rashes.

5. On account of its high concentration it is furnished in aseptic glass syringes of about one-fourth the regular size.

6. The smaller bulk causes less pain and disturbance to the patient.

Write for our new brochures on Curative Sera and Bacterial Vaccines; they are well worth reading.

H. K. MULFORD CO., ***Chemists***
PHILADELPHIA
New York Chicago St. Louis Minneapolis New Orleans Toronto

CONTRIBUTORS, 1908.

	PAGE
Bishop, L. F.	88
Bleyer, A. S.	764
Brugman, A. F.	145
Butler, W. J.	609
Butterworth, W. W.	439
Clemens, J. R.	92
Crampton, C. W.	341
Dennett, R. H.	80
Douglas, Charles	481
Dunn, T. J.	137
Edgar, J. C.	431
Edsall, D. L.	457
Elterich, T. J.	595
English, D. E.	620
Erdmann, J. F.	356
Eynon, W. G.	242, 447
Fisher, Louis	1
Freeman, R. G.	475
Gilbert, R. B.	699
Graef, Charles	7, 158
Herrman, Charles	284, 614
Hollopeter, W. C.	205, 494
Hunt, J. E.	627
Kelley, S. W.	409
Kerr, J. W.	431
Knopf, S. A.	731
Knox, Jr., J. H. M.	605
Loughran, F. W.	33
Loughran, R. L.	211
Mayer, Emil	359
Michaelis, Alfred	22
Mills, H. B.	494
Morse, J. L.	663
McClanahan, H. M.	681
Newton, McGuire	690
Park, W. H.	770
Pearson, Leonard	508
Pearson, R. A.	567
Porter, Langley	673
Post, W. L.	296
Pottenger, F. M.	67
Rae, J. B.	149
Ravenel, M. P.	564
Robinson, H. U.	384
Rogers, E. H.	40
Rongy, A. J.	288
Rosenau, M. J.	549
Schroeder, E. C.	422
Shaw, H. L. K.	12
Shelly, E. T.	29
Snyder, J. R.	751
Starke, Gustave	168
Syms, Parker	75
Tuley, H. E.	371, 487
Van Derslice, J. W.	558
Wallace, Charlton	275
Wootton, H. W.	233
Zahorsky, John	543, 760

INDEX TO VOLUME XX.

PAGE
Adenoids, Removing 528
Adenoid Patients, Post Operative Treatment of 529
Adenoid Vegetations and Impairment of Hearing 532
Adenitis, Cervical, Surgical Treatment of 130
Age, Anatomical or Physiological versus Chronological 341
Age in Early Life, Chronologic and Anatomic 717
Albuminuria, Juvenile Physiological 265
Alcoholic Problems, Physicians Interested in 322
Alimentary Intoxication in Infants 74, 119
American Pediatric Society 321
Anatomy of Infants, Peculiarities of 699
Anemia in Children 326
Appendicitis in Childhood 197
Appendicitis, Bradycardia in 534
Appendicitis, Chronic, in Children 588
Arterio-Sclerosis in the Young 403
Association of American Teachers of the Diseases of Children....317
Association of American Teachers of the Diseases of Children, President's Address 409
Asthma in Infants 194
Autane, Disinfection of Rooms by 402

Babies, Rise in the Value of 580
Babies, Instruction in the Care of, to Mothers and Older Girls....614
Backwards, A Step 262
Bacilluria in Childhood 524
Body, Defensive Arrangements of 585
Brain Stunt, Tea as a Cause of Child 538

Calomel, Deaths from 267
Carditis, Rheumatic in Childhood 125
Castor-Oil in Powder form 800
Child, The Unborn 46
Children, Care of Tuberculous 28
Children, Surgery for 406
Children's Hospitals in London 720
Chlorosis in Infants 55
Chorea in its Relation to Tonsillitis, Rheumatism and Endocarditis.609
Circulation, Physiology of 88
Cleft-Palate, New Method of Dealing with 539
Constipation in Infancy 60
Convulsions in Children 591
Convulsions in Children, Calomel as a Cause of 168
Convulsions, Treatment of Infantile 124
Croup, Spasmodic 533
Cutaneous Tuberculin Test in Children 197
Cutaneous Tuberculin Reaction During Measles....652
Cuti-reaction to Tuberculin in Infants 162

Dairy Hygiene, Development of 567
Death Rate, Pasturized Milk and the Infant 619
Dentition, The Doctrine of Difficult 595
Dermatitis, Diphtheritic 202
Diathesis, The Exudative 650
Diarrhea, Study of 136 Cases 648

Diarrhea, Treatment of Summer, in Infants 690
Diphtheria 401
Diphtheria, Diagnosis of 59
Diphtheria, Its Onset and Treatment 219
Diphtheria, Large Doses of Antitoxine in 654
Diphtheria, Sources of Error in Laboratory Diagnosis of...........218
Diphtheria Antitoxine, To Enchance the Efficacy of................726
Diphtheria Antitoxine, Limited Value of, as a Prophylactic........126
Diphtheria Antitoxine as a Prophylactic 58
Diphtheria, Tracheal, with Pseudo-Membrane Recurring...........507
Diphtheria Toxin, Cutaneous Reaction after Vaccination with......531
Diphtheritic Fever 144
Disinfection, Formaldehyde 260
Dysmenorrhoea in Children 267

Ear Disease in Infancy and Childhood 325
Ear Trouble in School Children 22
Eclampsia, Atropine Methylbromide in Infantile 750
Elbow, Fractures of, in Children 64
Endocarditis, Diphtheritic 51
Enteric Fever, Dairymaid Spreads an Epidemic of 651
Entero-Colitis, Intestinal Lavages in 723
Enteritis and Appendicitis in Children 63
Eustachian Tubes in Infants 54

Fat Absorption in Infants 330
Fat Incapacity in Young Infants 764
Fat Necrosis, Subcutaneous 49
Feces, Estimation of Fat in 493
Feeding, Infant 80
Feeding, Successful Artificial 53
Feeding, The Psychic Function in Infant 61
Feeding of Infant, Breast and Artificial 371
Feeding, Some Experiences in Infant 536
Feeding, Carrot Soup in Infant 724
Feeding, High Fat Percentage in Infant 680
Fetal Infection of Eyes, Mouth and Umbilicus, the Prevention of ...431
Fever in Children 648
Fever, Obscure in Infancy 582
Fingers, Treatment of Webbed 672
Fistulous Tracts, Tuberculous Sinuses and Abscess Cavities, New Method of Treatment 643
Flies, The Suppression of 658
Food Mixtures, Percentage Composition and Caloric Values of......673
Forceps and Version, Effect on Child 802

Gastric Conditions in Infants 187
Goitre in Newborn Infants 588, 722
Gonorrhoeal Stomatitis and Septicaemia 44

Haemorrhoids, Massage for 47
Hare-Lip and Cleft Palate Operations, Technic of 645
Heart in Childhood, Essential Insufficiency of the 190
Haemorrhage, Intercranial in Newborn, Localization and Clinical Symptoms of 405
Heredo-Syphilis, Treatment of 399
Heredo-Syphilis, Cardio-Vascular Malformation 187
Hernia in Children, Treatment of 323
Hernia, Strangulated Inguinal, in Infants 62, 526
Hernia in the Newborn, Treatment of Inguinal 608

Hydrocephalus, Treatment of 723
Hysteria in Children 533

Impetigo, Nephritis Due to 724
Infant Binders 657
Infant's Physical Condition, Score Card of 395
Influenza in Children 137, 145, 270
Influenza, Gastric Type; Respiratory Type 1
Influenza, Nose and Throat in 158
Influenza, Remarks on the Ear in 149
Itch, Treatment of 55

Jaundice in the Newborn 50
Juvenile Delinquent, Observations of the, from the Medical Standpoint 447

Lactic-Ferments, Enteritis in Children Treated with 525
Lymph Glands in Children, Tuberculosis of 67

Maternal Impressions 29
Measles, Early Diagnosis of 534
Measles, Seroimmunization and Serotherapy in 332
Measles, Is Disinfection after, Necessary? 284
Medical Man at the Bedside 205
Meningitis Cerebrospinal, Lumbar Puncture in 40, 48
Meningitis Cerebrospinal, Throat Affection 116
Meningitis Cerebrospinal, Serum Therapy in 116
Milk Bacteria, Effects of Heat Upon 549
Milk for Babies in Indianapolis, Pure 655, 658
Milk, Certified 269
Milk, Examination of Employees on Farms Producing Certified....770
Milk, Classification of City 705
Milk Commission, Report of the Committee on Chemical Standards..455
Milk Commission, Federal Recognition of the Work of the Medical.441
Milk Depots, Establishment of Infants' 394
Milk Epidemic in Christiania 645
Milk, Exhibit of Clean 523
Milk, Essentials in the Production of Clean 475
Milk, Infant Mortality and Goat's 47
Milk, Legislation as a Factor in the Production of Clean....487
Milk, Production, A Method of 192
Milk, Report of Committee on Inspection of Herds and Farms used for the Production of Certified 508
Milk, Raw versus Sterilized 532
Milk, Organisms in 21
Milk, The Recent Campaign for Clean, in Baltimore....605
Milk, Transmission of Tuberculosis through 422, 564
Milk, Therapeutic Use of Soured 331
Morphia in Children, Safety of 649
Mortality, Decrease in New York's Infant 648
Mothers of Infants, Caring for the 655
Mumps, Acute Hemorrhagic Nephritis after 535, 627

Napkin Region in Infants, Eruptions of the 398
Nasal Inflammation, Cause of Febrile Attacks in Young Children..323
Nerve Anastomosis and Infantile Paralysis 584
Newly-Born, Albuminuria of the 132

Ocular Faults in Children 7
Ophthalmia Neonatorium, Prophylaxis of 334
Osteo-Myelitis, Case of Acute 242
Otitis Media, Treatment of 333
Otitis Media, As a Complication 211
Otitis Media, Aseptic Meningeal Effusion in 328
Ovary, Hernia of, in Infants 653
Oxyuris, Vermicularis, Treatment of 689

Paralysis of Children, Delusions of Grandeur in General....265
Paralyphoid and Melena in Newborn Infants 589
Parrots Pseudo-Paralysis, A Case of 59
Pediatrics, Collaborators for 473, 521
Pediatrics, Case Teaching in 439
Pediatrics, Teaching of, in European School 681
Pediatrics, New Teachings in 261
Pediatrics as Taught in Medico-Chirurgical College of Philadelphia..494
Pepsin in Infants, Secretion of 722
Pertussis, Abdominal Belt Treatment of 115
Perigastric Adhesions 400
Peritonitis in Children, Pneumococcus 48, 125
Peritonitis Due to Salpingitis in Children 133
Pleurisy, Exudative in Childhood 480
Pleurisy, Sero-Fibrinous in Infants and Sign of the "Sou"..127
Pleural Effusions in Children, The Breath Sounds of 92
Pneumonia, Radiography in 129
Poliomyelitis, Acute with Diplococcal Infection of Spinal Sac......266
Poliomyelitis, Epidemic in Norway 57
Potts Disease, Diagnosis and Treatment 275
Post Scarlatinal Affections, Theory of 65
Pylorus in Infants, Hypertrophic Stenosis of the 404
Pylorus, Congenital Hypertrophic Stenosis of the 329

Rachitis, Its Pathology 620
Rachitis, A Review of 100 Cases 121
Radium in the Treatment of Naevi 167
Rectal Prolapse in Children, Treatment of 264
Rectal Prolapse, Paraffin Splints in 295
Rennet Coagulation in the Stomach of Nursing Infants.......657
Rheumatism in Children, Cutaneous Manifestations of 324
Rickets, Etiology of 583
Rickets and Syphilis 58, 263
Roentgen Ray in Pediatrics 536
Rumination in a Girl 128

Saline Infusions 535
Scarlet Fever, Analysis of 832 Cases 184
Scarlet Fever, Bacteriology of 499
Scarlet Fever, Diagnosis of 402
Scarlet Fever, Explanation of Late Return Cases 123
Scarlet Fever Heart 268
Scarlet Fever Recurring 40
Scarlet Fever, Rheumatism and Skin Gangrene in 653
Scarlatina Associated with Pyrexia in Apparently Healthy Contact Cases 592
Scarlatina, Results of Antistreptococcus Serum in 384
School Child, Some Phases of the 558
Scurvy, Infantile 12
Scurvy, Blood Modifications in 287

Serum, Hypersensitiveness to Anti-diphtherial 590
Spasms and Acute Encephalitis of Infants 128
Spina-Bifida, Report of a Case of 296
Splenic Infection with Leishman-Donovan Bodies 330
Spinal Amyotrophy, Anatomical Lesions of Diffuse 530
Stools of Infants, Examination of 760
Stools, Mucus and Lump in Infants' 45
Syphilis in Children 163, 480
Syphilis, Forme Scrofuloide 400

Temperature, Sub-Normal of 80° F. 33
Temperature in Infants, Daily Variations of 659
Testicles, Tuberculous, in Children 195
Testicle, Undescended 53
Tetanoid Conditions in Children 326
Thymus and Asthma 584
Thyroid Feeding 613
Thyroid Insufficiency and Nocturnal Enuresis.....................265
Tonsils, Value of 201
Tonsil, Surgery of the Faucial 131
Torticollis, Unexpected Cause of Spasmodic 133
Torticollis Congenital 332
Tracheo-Bronchial Adenopathies 527
Trachoma, Clinical Features of 233
Tuberculosis in Childhood 188
Tuberculosis, Immunity to 532
Tuberculosis, Channels of Entrance of 191, 801
Tuberculosis, International Congress on 41
Tuberculosis of the Inner Genitals 124, 329
Tuberculosis, Overcoming the Predisposition to Infection During Childhood 731
Tuberculosis, Sac Method of Immunization of Cattle Against 584
Tubercular Glands of Neck, Surgical Treatment of 75
Tuberculin Ointment, Diagnostic Skin Reaction with 589
Typhoid Fever in Infants 663
Typhoid Fever, Outbreak of Milk Borne 587

Umbilical Stump, Management of 193
Uncinariasis in the Southern States 751
Urachus, Patent, in a Child Four Years Old 356
Urinary Tract in Children, Bacterial Infections of........189, 334, 543
Urine, Ammonia Co-efficient in 586
Upper Air Tract, Value of Symptoms of, in Rheumatism, Gout and Diabetes 359

Vaccination of School Children 195
Vaccins and Bacterial Infections 54
Visiting the Father's Sins 185
Vulvo-Vaginitis in Infants and Children 288

Wasted Infants, Some Gastric Conditions in 123
Weaning of the Infant, What Conditions Demand 481
Whey, Wine 134
Whooping Cough, Fluoroform in 56
Whooping Cough, Bacteriology of 720

BOOK REVIEWS.

PAGE
Diseases of Infancy and Childhood, by Louis Fisher, M. D. 66
Cosmetic Surgery, by Charles C. Miller, M. D. 199
An Introduction to the Study of the Infant's Stools by Paul Selter, M. D. 199
The Production and Handling of Clean Milk, by Kenelm Winslow..200
Maternity, by Henry D. Fry, M. D. 200
The Treatment of Diseases in Children, by G. A. Sutherland, M. D...271
Skin Affections in Childhood, by H. G. Adamson, M. D. 271
Functional Nervous Disorders in Childhood, by Leonard G. Guthrie, M. D. 271
The Diagnosis and Treatment of Pulmonary Tuberculosis, by Francis M. Pottenger 337
Christian Science, by Rev. Lyman P. Powell 340
Bradycardia and Tachycardia, by Prof. Dr. Edmund von Neusser..408
Manual of the Diseases of Infants and Children, by John Rurah, M. D. 408
The Diseases of Children, by Dr. M. Pfaundler and Dr. A. Schlossman 475
The Diseases of Infancy and Childhood, by Henry Koplik, M. D...541
Dyspnoea and Cyanosis, by Prof. Dr. Edmund von Neusser........541
The Baby: Its Care and Development, by Le Grand Kerr, M. D.....594
Golden Rules of Dietetics, by A. L. Benedict, M. D. 661
A Practical Treatise on Therapeutics, by Dr. Paul Le Gendre and Dr. August Broca 729
Compendium of the Diseases of Children, by Prof. Marfan..........803

SOCIETY PROCEEDINGS.

PAGE
American Pediatric Society 508, 569, 629, 706
Bethesda Pediatric Society 796
Chicago Pediatric Society 790
Medical Society, County of Kings, Section on Pediatrics, 37, 113, 178, 257, 312
New York Academy of Medicine, Section on Pediatrics, 94, 170, 240, 300, 458, 771

A SUCCEDANEUM FOR MORPHIA.

We meet with many cases in practice suffering intensely from pain, where from an idiosyncrasy or some other reason it is not advisable to give morphine or opium by the mouth, or morphine hypodermically, but frequently these very cases take kindly to codeine, and when assisted by antikamnia, its action is all that could be desired.

In the nocturnal pains of syphilis, in the grinding pains which precede labor, and the uterine contractions which often lead to abortion, in tic-douloureux, brachialgia, cardialgia, gastralgia, hepatalgia, nephralgia and dysmenorrhoea, immediate relief is afforded by the use of this combination, and the relief is not merely temporary and palliative, but in very many cases curative.

Muscular spasm is often controlled by antikamnia and codeine tablets. Their action is of essentially the same character as the morphine action; the same parts of the central nervous system are affected, and in the same way as morphine, but not in the same degree. Nor do they induce habit.

In pulmonary diseases this combination is worthy of trial. It is a sedative to the respiratory centers in both acute and chronic disorders of the lungs. Cough, in the vast majority of cases, is promptly and lastingly decreased, and often entirely suppressed. In diseases of the respiratory organs, pain and cough are the symptoms which especially call for something to relieve; these tablets do the work, and in addition control the violent movements accompanying the cough, and which are so distressing.

THE TREATMENT OF INDIGESTION.

(From the New York Medical Journal, Feb. 29, 1908.)

Recent reports from physicians who have been using Papay-ans Bell in gastritis and intestinal indigestion, indicate that this preparation has often produced favorable results after pepsin and pancreatin had proved unsatisfactory, and there is ample evidence, furnished by successful and conservative practitioners, that its use is steadily gaining in favor. They report that it increases the appetite, promotes the digestion of food, corrects fermentative conditions and stimulates the secretions of the salivary, peptic, pancreatic and biliary glands to natural action, thus restoring the digestive tract to a normal condition. The superiority of the results obtained by the use of this preparation, in the treatment of gastro-intestinal diseases, may be due to the nature or to the quality and proportion of the ingredients, or it may be due to the method of their preparation and combination; but whatever the reason, the fact remains that its use is very rapidly increasing, and that many of the most prominent local physicians are now steadily prescribing it.

PEDIATRICS

Vol. XX. JANUARY, 1908. No. 1

ORIGINAL ARTICLES

INFLUENZA.

Gastric Type; Respiratory Type.

By Louis Fischer, M. D.

ATTENDING PHYSICIAN TO THE WILLARD PARKER AND RIVERSIDE HOSPITALS, NEW YORK CITY.

The prevailing epidemic of influenza has shown two distinct types of disease: first, the respiratory type, in which the infection spends its forces on the naso-pharynx, and in some instances giving rise to pulmonary symptoms.

The second type is the gastric or gastro-enteric form. Certain symptoms stand out most prominently in the gastric form of this disease. In young infants a loss of appetite, vomiting and diarrhœa may suddenly appear. This condition will occur while the infant is nursing at its mother's breast and where dietetic errors can be excluded. The symptoms of toxemia, due to the influenza infection show marked similarity to that clinical condition known as summer complaint. In a series of cases seen by me there was a sudden onset of all symptoms. An apparently healthy baby will refuse to nurse and if the food is forced into the stomach, then vomiting may follow.

Breast-Fed Infant. The clinical picture in this form of influenza is similar to the mid-summer type of cholera infantum. The infection takes place in the following manner. There is usually a history of some member in the family having had the grip. The infant up to this time had been enjoying excellent health. It is suddenly taken sick. The human milk causes dyspeptic symptoms, such as vomiting, diarrhœa and anorexia. The infant turns away from the breast and the mother in her anxiety to feed the baby usually commits the dietetic error of too frequent feeding. Accompanied by these symptoms there is a marked febrile disturbance. The temperature may be 101 degrees F. and rise to 104 degrees F., or even 105 degrees F.

Besides this the pulse rate is accelarated and may reach 130 or 140. The pulse never intermits as it does in tubercular meningitis. The respiration is also increased and is usually between 30 and 40 per minute. There is no cough present and there are no distinct evidences of pulmonary involvement. The surface of the skin feels hot and the head is flushed. At times an erythematous or an urticarial eruption will be found on various parts of the body chiefly confined to the face, thorax and abdomen. This punctate eruption lasts from 3 to 4 days. The infant has marked apathetic condition and moans at times as though in pain. The stomach and abdomen appear distended and percussion shows marked meteorismus. The flatulence is also evident by frequent eructations as well as by the expulsion of flatus. The tongue is coated with a whitish fur. The pharynx and tonsils appear red and congested but there are no visible patches. There is a marked odor of acetone perceptible from the breath. The cervical glands are not involved.

Bottle-Fed Infant. The clinical manifestations in an infant brought up artificially, are usually more intensified. The same clinical picture of nausea, vomiting, fever, and gastro-enteric disturbances will also be found. In addition thereto the temperature may reach 105 degrees F. at the very beginning and the symptoms may be ushered in by convulsions. The stools, which until now have been of a uniform consistency, show evidences of entero-colitis. They are either green or muddy and contain mucous and undigested particles of food, and are foul smelling. They are accompanied by large quantities of gas. From the irritation of these acid stools there is an excoriation around the anus and the buttocks are usually red and inflamed. The urine shows a high gravity and acetone in addition to quantities of indican. The latter indicating a disturbance of metabolism due to putrefactive absorption.

Pulmonary Type. One of the most common forms of influenza met with in infancy and childhood may be described as the bronchial type. The symptoms appear in the following manner: A healthy infant with good appetite and digestion, is suddenly attacked with fever. In addition to fever we notice marked peevishness and restlessness at night. Sometimes the earliest symptoms may be sneezing and coryza. The pharynx will show marked hyperæmia and cough may be present. Older children will complain of pains in the muscles and appear languid and tired. The muscular pains may be so severe that children will suddenly refuse to walk thus, giving the impression of a pseudoparalysis. Marked tenderness will be noted when the limbs are flexed or extended. The appetite usually disappears. There is a general disturbance of the digestive tract without especial symptoms pertaining thereto. Many of these bronchial cases have the infection limited to the nose and throat and thus we frequently find the enlarged lacunæ of the tonsil filled with a yellowish or whitish punctate deposit. The diagnosis of follicular tonsillitis, although made from the clinical evidence or appearance, may show streptococcus, a stapholococcus, or most commonly, Pfeifer's influenza bacillus.

We do not have the lymphatic glands of the neck swollen nor do they show the involvement so common to the diphtheritic or the scarlatinal sore throat. If active treatment has been instituted and the child possesses good vitality then the infection may limit itself to this area. It may spread, however. If it spreads then the infection is transmitted through the bronchial tubes into the aveoli of the lung setting up distinct consolidation.

The lobar type of pneumonia is very frequently seen associated with this type of infection. In many cases the physician will first be consulted, because of an existing high fever, rapid breathing or dyspnœa after the initial invasion has passed and when complete consolidation has manifested itself.

Treatment of Bronchial Influenza. The treatment of this form of pneumonia demands first: restorative treatment in the form of nutrition such as proteid in the form of eggs, milk, soups, broth and cereals. Infants at the breast should be given an ounce of sweetened rice or barley water prior to each nursing. This will dilute both the fat and proteid, besides rendering the milk more digestible during this febrile period. If an infant has been bottle-fed or brought up artificially on cow's milk, then a good plan is to dilute the milk with an equal quantity of water during this febrile period. If milk is not well borne after the dilution just mentioned then it may be necessary to remove the curd from the milk by adding some essence of pepsin or similar milk curdling ferment, straining out the cheese and using the liquid whey.

Hygienic Treatment. Every sick child demands fresh air. This does not mean that a child or an infant with subnormal vitality, with a system already depressed from profound toxæmia and cyanotic should be exposed to cold winds and frigid blasts. *The depressed heart action requires oxygen without the dangerous chilling of the surface of the body.* The nervous system already sensitive from the disturbance due to the toxins is not in a condition to tolerate sudden changes. These sudden changes of temperature from a warm room to a cold wind have the same effect in some cases as the profound shock frequently seen during the course of an anæsthetic. This latter shock is produced by fear and the same holds good when the system is needlessly exposed. My advice, therefore, is to place the child in a well ventilated room having a temperature ranging from 68 to 72 degrees F., such temperature is well borne and stimulates the circulation of the blood rather than interferes with convalescence.

General Plan of Treatment. The elimination of stagnant particles of food will remove fermenting and decomposed food. Its effect will also be apparent on the fall in the temperature. Rhubarb and soda mixture in teaspoonful doses is indicated, and should be repeated every hour for three or four doses, aided by warm colonic flushings. This will do good. Water should be given in large quantities to cleanse the gastro-enteric tract and also to aid diuresis, and for its antithermic effect.

Antipyretics should not be given, because they cannot eliminate the poison and because they depress the heart action and stifle the symptoms for the time being, without any ultimate benefit. Sponging the body with cool water or by evaporating lotions such as alcohol and water may do good and are very comforting to the patient. A tepid bath at temperature of 85 to 90 degrees F., for several minutes in the evening will soothe the infant and frequently induce sleep. My rule concerning sleep is the following: *Do not disturb the infant if asleep.* Harm is done by disturbing the infant. To aid nature in restoring health, rest, and therefore sleep, is of prime importance. Five or six hours of sleep will frequently refresh the infant and restore its appetite, hence stress should be laid on this important point.

Feeding. During an acute infectious disease, digestion is subnormal, hence we must adapt the food to the capacity for digestion and assimilation. Instead of whole milk whey should be given for several days until normal conditions prevail. In a breast-fed infant the milk should be pumped off and diluted with an equal quantity of sweetened rice water. The interval of feeding should also be prolonged and instead of feeding once every three hours, the interval should be prolonged to four hours. In like manner instead of eight ounces at one meal the quantity should be reduced to four ounces.

One word concerning convalescence. The proximity of the eustachian tube to the pharynx, and the ease with which an infection can extend into the middle ear should be remembered Restorative treatment in which cod liver oil and especially small doses of strychnia form a part are worth remembering. The danger of re-infection must be considered.

There is a peculiar tendency to suppuration in influenza. This should be remembered when persistent fever remains. In the naso-pharyngeal infection it is always important to examine the ears, hence a routine point in making the diagnosis of an obscure fever should be the elimination of possible ear disease. While otitis media of a purulent character is most frequently found we must not overlook the danger of the infection spreading to the mastoid cells and giving rise to mastoiditis. In a case of influenza of the respiratory type seen by me sometime ago there was rigidity of the sterno cleido mastoids, high fever, moaning, somnolence. All symptoms pointing to cerebro-spinal meningitis. An examination of the ear cleared the mystery. The child suffered with a double mastoiditis for which an operation was performed. What applies to the ears, applies with equal force to the lungs and thus persistent fever following pulmonary disease requires care so that a possible pleural effusion should not be overlooked. I have, during the last two weeks, seen three cases of empyema following influenza in very young children. The same rule holds good in dealing with the gastro-enteric type of influenza. Appendicular inflammation and perityphlitic abscess should be carefully looked for. The migration of the influenza bacillus through the lymphatics may give rise to complications in the liver. The ease with which a gastric infection can spread to the duodenum and thence to the bile ducts should be remembered. Jaundice, if present, may be hepatogenic and hence attention should be directed to the liver and gall bladder as a possible seat of the invasion of the influenza bacillus. The bacillus coli commune and also Pfeifer's influenza bacillus may give rise to pyelitis. Pyelitis, if present, may be one of the most troublesome disorders of infancy. The ease with which the diagnosis can be made has been emphasized by me in a paper read before the Section of Pediatrics, New York Academy of Medicine, Dec. 13, 1906. Also in my book on Diseases of Infancy and Childhood, page 411.

The routine examination of the urine of all infants and children is so important that it is only a careless physician who could overlook a case of persistent pyelitis in a child.

One word concerning the blood as an aid to diagnosis of suppurative conditions in children. In a child seen by me recently with high fever extending over several weeks, an examination of the blood made for me by Dr. Sondern, showed the polynuclear percentage to be 85. An effusion was located on the right side of the chest. An exploratory puncture revealed pus.

In this age of progress we must combine the physical examination of a child with all modern laboratory assistance, and obscure lesions will frequently be cleared up, in one case by an examination of the blood, in another by an examination of the urine, in a third by sputum, or by taking a culture from the nose, throat, ears, or genito-urinary tract.

65 East Ninetieth Street.

A CONSIDERATION OF SOME OCULAR FAULTS MET WITH IN CHILDREN.

By Dr. Charles Graef.

Oculist and Aurist to Fordham Hospital.

The tendency of modern practice lies more and more in the direction of preventive medicine. The average patient is learning to look to his medical adviser for instruction which makes it possible to prevent the development of various pathological conditions, almost as often as he seeks the physician's help when actually overtaken by illness. Much progress is certainly being made in spreading such education.

In connection with the eye, however, there are a surprising number of conditions about which mistaken ideas are held by most people, and in which they are unfortunately often allowed to continue through lack of correction by the family physician. These errors are particularly prone to occur in the care of children.

It is not so uncommon, for example, to find that the parents of children with defective eyes are advised to take them to the nearest optician to have the eyes examined for glasses, a task which can certainly never be entrusted to such an individual with safety. The eyes of practically all children, really in need of glasses, refuse to betray the true state of affairs to the necessarily superficial examination that must be given them by anyone lacking the qualification of medical training, and the only reason that can be urged in excuse for such a makeshift—that of economy—is assuredly a seriously mistaken one in a matter so important to the child's future as is his eyesight.

It should not be forgotten that it has been proved that choroiditis may be induced by the wearing of improper glasses, and as a sequence various degenerative changes of nerve or media may follow. Cases of cataract have been traced to such faulty treatment.

The optician in grinding, and properly placing, the lenses ordered for a patient has work to do fully as important, in its way, as that of the ophthalmologist who examines the eyes and decides what kind of glasses, if any, are necessary; but that a physician should refer to him a patient for analysis of the symptoms complained of, and the selection of suitable glasses, is no less absurd than to expect the doctor to send the rest of his clientele to the nearest druggist, with the request that *he* choose the drugs suited to their several needs, as well as dispense the mixtures when he has reached a decision in each case.

The fact that the optician or the druggist is cheerfully willing to assume these tasks can hardly be regarded as a recommendation in either case.

The common trick of masquerading under a pretentious title as *"Optometrist,"* or *"Eyesight Specialist,"* should no more disguise the real status of such a pretender than the purloined ornaments of the Jackdaw succeed in winning respect for that feathered faker. More than one of these individuals brazenly invites the profession, by letter, to refer to him such cases as may need the aid of an *Eye Specialist,* making inclosure of clippings from the lay press to enlighten (*sic*) the physician on the danger of using Atropine, etc., in examining the eyes of children.

The practitioner owes it to the profession, and to his patients, to aid wherever he can in spreading the knowledge that the trustworthy optician is fully occupied in skilfully filling the prescriptions of the ophthalmologist, and makes no pretence to knowledge or skill that can be gained only by medical training.

Another matter about which there is a great deal of misunderstanding in the lay mind is the occurrence of *"Squint"* or *"Crossed Eyes"* in children. Many people have an idea that cases of squint develop in children because of troublesome teething, or an attack of measles, whooping cough, or one of the other troubles incident to childhood, and many of these make the still more serious mistake of believing that if left alone the children are likely to *"grow out"* of the difficulty with the eyes.

No child ever became cross-eyed because of such troubles alone. The real cause of all ordinary cases of squint is some fault in the eyes themselves, the illness which seems to be the origin of the squint contributing to its appearance only by lessening the vitality of the child, thereby making it impossible for the eyes to conceal the existing fault as they were able to do before. Sometimes the fault in the eyes is not so marked in kind, or degree, but that a squint which appears when the child is weakened by illness or the effects of excitement, disappears when bodily health or quiet is restored, and such a case may easily serve the average man as an evidence that non-interference is all that is needed to cure cases of cross-eyes. Even in such patients, however, the ocular fault remains to be dealt with if recurrence of the squint is to be avoided.

The sooner a case of cross-eye is taken in hand by the ophthalmologist, after its first appearance, the better his results will be. A fair percentage can be cured by glasses alone if properly attended, and here again the family physician should take care to counsel his patients to avoid the offer of the "Examining Optician" *et al.* That way danger lies.

A form of eye trouble in children and young adults about which the family practitioner is commonly consulted is the repeated occurrence of *"Styes"* on the lids. Such patients are often brought to the physician under the impression that the difficulty is due to *"bad"* or *"impure"* blood, and as a matter of fact, occasional cases of this kind are due to malnutrition, etc.; pronounced examples are sometimes seen in cases of Diabetes for instance, but the vast majority owe their affliction to ocular faults alone, and can be permanently relieved only by proper attention to this fact. Anyone may have a hordeolum, or *"stye"* at times; it is only an infection with pus germs of some part of the follicle of an eyelash, but the continued occurrence of such unpleasant sores, especially if they come in "crops," should lead to an investigation of the eyes for such refractive or other faults as the ophthalmologist frequently finds is the real source of trouble.

Every medical man has to deal with more or less numerous cases of phlyctenular disease of the cornea and conjunctiva in children. In the majority of these cases injudicious feeding and confinement to the house is a contributing cause, and in many of them unhealthy adenoid and tonsil growth also demands attention. The picture that such a child presents of a *"bad cold"* with its running nose, watery, irritated eyelids, and the refusal to open the eyes except in a darkened room, seem to justify the parents in their determination to keep the little patient in the house until he is better. This is a mistaken policy, however, and only serves to prolong the disease. Fresh air daily, with sunshine, if possible, but without it if this cannot be had, should be insisted upon. This measure and plain, simple diet from which all sweets, cakes, raw fruits, etc., are rigorously excluded, are the important items in successful treatment of such cases. An ointment of the red or yellow oxide of mercury, 1% strength, may be used in the affected eye three or four times daily and will usually be sufficient as local treatment, unless there is ulceration of the cornea when atropine sulphate in similar strength may be added with advantage.

In addition to cases of this type, and to those of a well-marked strumous diathesis, in which appropriate medical measures will, of course, suggest themselves, there remains a certain percentage of these patients in whom a thorough examination of the eyes reveals to the ophthalmologist, and to him alone, defects which must be relieved by the use of suitable glasses. Such cases are numerous enough to make this fact of real importance in practice.

A condition to which an increasing amount of attention has been given of late, because of the interest now taken in it by municipal and other health officials, is that of "granular ophthalmia" or "trachoma." Parents who learn for the first time that anything is wrong with their children's eyes, from the cards given at school by the inspector of the health board, frequently find it difficult to believe that an ailment, so apparently trifling, merits the attention they are asked to give it. It is true that some of the cases discovered in this way are comparatively harmless. as carriers of contagion to others, but no one can safely classify these cases into, (a) those of mild follicular conjunctivitis likely to clear up with or without treatment, and (b) the very similar looking condition which will proceed to a full-blown trachoma. The difference appears to be only one of degree to the examiner. Attempts have been made to establish the former as a condition due to hypertrophy of certain small cell collections (Krause's lymph-follicles), resident in the conjunctiva, while trachoma granules are new formations due to a contagium as yet unidentified. No sufficient basis for such a theory has been produced, however, and it is necessary to look upon all granular conditions of the conjunctiva as requiring treatment. To ignore this fact is to court disaster, for the unfortunate results of neglected trachoma are well known. Patients with trachoma should receive treatment appropriate to the stage in which the case is approached. The cases are most contagious when secretion is abundant, and segregation of these patients should be required. Cleanliness, another important factor, can best be insured by frequently bathing the eyes with warm boracic solution, or perchloride 1-8000. Silver nitrate in 1% solution, or freshly made solutions of Protargol, or Argyrol, 10 to 15%, should be dropped into the eyes in the stage of active secretion. Later, when the follicles are being dealt with, the alum, or copper sulphate stick, especially the latter, will be of most service. In cases where the granulations are profuse and thick, one of the different forms of operative expression should be employed.

The physician will here again find it necessary to warn the unwary against the glowing promises of the spectacle man who confidently undertakes to cure all cases of trachoma with his marvelous make of glasses. The fact that continued irritation of the conjunctiva, as of any other mucous membrane, results in hypertrophy of the lymphoid elements of these tissues, and that relief from the source of irritation may in time bring about a disappearance of such follicles in some instances, is recognized by the ophthalmologist as a reason for ordering suitable glasses in selected cases, but no one could honestly attempt to turn this fact into an argument that spectacles are the necessary and only panacea for ocular ills of this type.

1076 Boston Road, New York.

INFANTILE SCURVY.

Barlow's Disease; Moeller-Barlow Disease; Infantile Scorbutus.

By Henry Larned Keith Shaw, M. D.

CLINICAL PROFESSOR OF DISEASES OF CHILDREN, ALBANY MEDICAL COLLEGE, ALBANY, N. Y.

This is a disease of faulty nutrition occurring in the early years of life and characterized chiefly by anæmia, bleeding gums, pain on movement and swellings on the bones of the extremities.

This disease is often spoken of as if it were a disease of recent discovery and of modern development. Still calls attention to the fact that Glisson in his "Treatise on the Rickets," as long ago as the middle of the Seventeenth Century, very accurately described the characteristic symptoms of infantile scurvy. He recognized that it was not an acute form of rickets, but a disease distinct from it. In the English translation published in 1651, he says: "The scurvy complicated with this affect (rickets) hath these signs: (1) They that labor under this affect do impatiently endure Purgations; but they who are only affected with the Rachites do easily tolerate the same. (2) They are much offended with violent exercises, neither can they at all endure them. But although in this affect (rickets) alone there be a kind of slothfulness and aversation from exercise, yet exercise doth not so manifestly, at least not altogther so manifestly, hurt them as when the scurvy is conjoyned with the rachites. (3) Upon any concitated and vehement motion they draw not breath without much difficulty, they are vexed with divers pains running through their Joynts, and these they give warning of by their crying. . . . (4) Tumors do very commonly appear in the Gums. (5) The urin upon the absence of the accustomed Feaver is much more intense and increased."

Möller in 1859 gave a clinical description of this disease but called it "acute rickets," as he believed the specific symptom complex was an indication of an acute exacerbation of rachitis. Ingerslen in 1871 called it scurvy, but Sir Thomas Barlow in 1883 was the first to give a scientific and convincing demonstration of its being a disease *sui generis*. He made an exhaustive study of 31 cases with post mortem examinations of seven and employed the name infantile scurvy. His summary of the essential features of this disease bear repetition: "(1) Predominance of lower-limb affection with (a) immobility, with the knee slightly flexed and thigh rotated outward, often pseudo-paralysis; (b) excessive tenderness; (c) general swelling of the lower limbs, due for the most part to subperiosteal hemorrhages; (d) skin shiny and tense, but seldom pitting and without undue local heat; (e) thickening of the shaft of the bone, made out when the swelling has disappeared; and (f) liability to fracture near the epiphysis. (2) Swelling of the gums, varying from definite sponginess down to minute transient ecchymoses. The conditions mentioned constitute the chief diagnostic criteria between scurvy and rickets in children. To these should be added (3) the tendency to hæmorrhage either into the skin, subcutaneous tissues, mucous membranes, or rarely into the viscera, and (4) the definite and rapid improvement upon antiscorbutic diet."

It would seem, therefore, that scurvy has occurred in infants for centuries, but has only been clearly recognized in the past 20 years.

Osler's "Practice of Medicine" (1892) was the first text book to mention this disease. Since then a large number of cases have been published and discussed in the medical journals. The American Pediatric Society made an exhaustive study of 379 cases in a collective investigation of infantile scurvy in 1898.

Formerly this disease was confused with rachitis and was called by many excellent observers "acute rickets." Four years ago in Vienna, the writer saw a case presented in one of the clinics as "acute hæmorrhagic rickets," which was undoubtedly one of infantile scurvy.

The specific cause is not known. Two factors seem to have a causative influence. (1) The kind of food and (2) a special individual susceptibility.

With very rare exceptions, only artificially fed babies are affected. A diet unsuitable for the needs of the infant must have been maintained for several months. While any form of artificial feeding may produce this disease, yet certain methods favor its appearance. The proprietary foods come first and then sterilized, pasteurized and boiled milk. With the use of raw cow's milk, the disease is rather rare. The chief changes which take place in milk when it is heated are, the destruction of the enzymes, the change of soluble calcium compounds into insoluble calcium phosphate, the destruction of a certain amount of nucleon-phosphorus, the conversion of the amorphous neutral calcium citrate into the less soluble crystalline form. Other changes take place, but are not so important in the causation of this disease. Netter considers citric acid as the specific antiscorbutic constituent of cow's milk. Johannessen suggests that toxins from the killed bacteria in milk may have a part in the production of infantile scurvy. Neuman seeks the cause in a chronic poisoning, "the poison may arise exogenously from the food by bacterial action, by clinical means or by the action of heat, or it may arise endogenously during digestion."

The possibility of an auto-intoxication due to some toxin arising in the food has been suggested. No support to the theory of a bacterial origin of the disease has been found in bacteriological and histologic examination and inoculation experiments.

This disease affects both rich and poor, but seems to occur more frequently in the families of the rich. This is, perhaps, due to the fact that proprietary foods and various preparations and manipulations of the milk cost money. Besides there is often an undesirable uniformity of food in the diet lists of well-to-do families.

Individual predisposition is shown by the fact that of twins who have had the same nourishment, one may thrive splendidly and the other become affected.

This disease rarely appears before the ninth month. This has an important diagnostic bearing as syphilitic epiphysitis most often begins under the age of three months and rheumatism in children under three years of age is practically unknown.

The ages of the infants in the American Pediatric Society's investigation were between the age of seven and fourteen months. Sex has no influence and it occurs with equal frequency in male and female infants.

The pathologic changes in infantile scurvy consist chiefly in subperiosteal hæmorrhages in the diaphysis of the long bones, especially near the epiphyseal junction. These hæmorrhages may surround the entire shaft or may be absent. Visceral, orbital and subcutaneous hæmorrhages are not uncommon.

There are changes in the bone marrow and also an associated destruction of osteoblasts which result in an abnormal thinness of the bone at the margin of growth on the diaphysis. Consequently the affected bones become brittle and small traumata may lead to partial or complete fractures at the extremities of the long bones. The epiphysis often become loosened and dislocated as a result of the fissures and fractures at the epiphyseal line. The joints are never affected.

The relation to rachitis has been the subject of much controversy. Both diseases are due to improper diet and probably a diet faulty in one respect is faulty in others. But the error is not the same for both diseases. The worst case of rachitis may have no sign of scurvy and vice versa. Many infants of the lower class who are fed on potatoes very early in life develop severe rachitis, but no scurvy, and we know of no more powerful antiscorbutic agent than potato. Rachitis is very common among the very poor, while scurvy is rare. Symptoms of rickets are found in a large number of cases of scurvy. The anatomical changes are essentially different in the two affections.

To serve as illustrations before discussing the symptoms in detail, I will give a brief account of two cases occurring in my private practice during the past year, which show how easily physicians overlook this disease.

Case I. Josephine K., an eleven-months'-old infant was brought from Catskill. She was the youngest in a family of nine; parents healthy. Was exclusively fed on the breast for two months, then put on Nestle's food. Gained steadily in weight until she was eight months old. Then had a spasm followed by œdema. The child had become very fretful and cried when touched. On several occasions had passed bloody urine. Had been under the treatment of several physicians for rheumatism and Bright's disease. No change had ever been suggested in the diet.

The examination showed a very anæmic child who cried so hard that it was impossible to make a thorough examination. The skull was rachitic, no craniotabes. There were no teeth. The gums were swollen, of a bluish red color. Over the two upper central incisors were two blebs of blood.

The skin was hypersensitive. A marked rachitic rosary was present. Heart and lungs appeared normal. The legs were both swollen and edematous. The swellings were most distinct over the tibia. The examination of the urine was negative. The treatment was a diet of raw cow's milk and barley water, equal parts, and a teaspoonful of orange juice every three hours. Two weeks later the baby was again brought to my office. The blebs over the teeth had disappeared and the gums looked better. The child was less sensitive. She had laughed during the past few days for the first time in months. A specimen of urine examined at that time was negative. Four weeks later or six weeks after the first treatment the child was apparently in perfect health. All swelling and tenderness had disappeared, the mouth had a normal appearance and the child had gained four pounds in weight.

Case 2. Katherine G. Age, 14½ months. Youngest of four healthy children. Was seen in consultation with Dr. Hutchinson of Troy. She had been breast-fed for three months and then given a mixed feeding with Horlick's Malted Milk until she was nine months' old. Several attempts were made to give cow's milk, but it did not seem to agree. At 12 months cereal or beef juice was given once daily. Malted milk was poured over the cereal in place of milk or cream. When seen the child was taking malted milk made with water. She cut her first teeth when six months' old without any difficulty. Has now nine teeth. The bowels had always been good.

The child was in perfect health and had gained steadily until four weeks before. She then complained of pain in the legs and it seemed to cause great pain to touch, handle or bathe her. No swellings or enlargements had been observed. For the past ten days had not moved her legs so freely and would make no attempts to stand. The child has been almost constantly under the effect of bromide and anodynes. A surgeon was called to see the child and had made a diagnosis of coxitis on account of a spasm of the right psoas muscle. He had applied a plaster cast extending from the right ankle to the waist. The soreness of the gums had been growing constantly worse. Two weeks ago a dentist lanced two of the teeth, but they have not come through. Nine physicians, including the dentist, had seen this child and not one had suggested any change in the diet. The examination showed a large and apparently well-nourished child. Was slightly anæmic. The child was so nervous and fretful and on account of the plaster cast a careful examination could not be made. The gums, however, were swollen and the bluish discoloration was very marked.

The next day the plaster cast was removed in my presence and no swelling could be detected on either extremity. There seemed, however, to be more of a spasm of the left leg than the right, which had just been released from the cast. The treatment was simply the administration of raw milk and barley water, and the juice of one orange daily. Two weeks later the child was well and the signs of scurvy had entirely disappeared. She was trying to walk, slept well at night and was playful and cheerful.

It will now be interesting to consider the symptoms as described in various articles on this disease.

Anaemia. There is generally a very pronounced symptom and is present in more or less degree in all cases. The hæmoglobin may be as low as 30 or 40%. There is a slight leukocytosis and a diminution in the number of red cells. Ritter showed there was a decided increase in the mononuclear cells.

Tenderness and Loss of Movement. This is one of the most striking symptoms. At first the children cry with the ordinary handling, then they move less than formerly and finally every touch and movement is painful. These symptoms occur more frequently in the legs than in the arms. The thorax is more frequently tender than the arms. With the tenderness is associated visible or palpable swelling of the affected limb. This may be so slight that it is easily overlooked. Careful and gentle palpation will show swollen areas and especial tenderness at the ends of the diaphysis. The location of these swollen areas is of importance. They are not limited to the epiphyseal region like an epiphysitis, but extend some distance along the shaft of the bone which would distinguish it from joint disease. The lower end of the femur is most frequently involved. The skin over these swellings becomes tense and glistening and the swollen part feels doughy to the touch and pits on pressure. This œdema was a misleading feature in one of my cases. There is often found a swelling of both lower legs. These painful swellings may appear on any bone of the body. The epiphysis may become separated on account of the effusion of blood at the epiphyseal junction and produce dislocation and fractures.

The loss of movement may be so marked as to be mistaken for paralysis. A tonic spasm of the muscles as in one of my cases, is not uncommon and may be very misleading.

Gums. The characteristic appearance of the gums is a very important and frequent symptom. The gums are of a dark bluish red or purple color. They are inclined to bleed. The appearance of the gums is especially marked about the teeth which have already appeared or are about to appear. The gums may be affected when there are no other obvious signs of scurvy and may be considered one of the earliest symptoms of this disease.

Haemorrhages. Subperiosted hæmorrhages upon the cranial bones about the orbit may press the eye balls forward, producing either an exophthalmus or "black eye," according to the extent of the hæmorrhage. Still, of London, calls attention to hæmorrhages in the mucous membrane of the hard palate. This discoloration was present in three of his cases in which there was no gum affection. Extravasations of blood into the skin and mucous membranes are evidences of the hæmorrhagic diathesis, but are not common. Bloody stools have been observed. Post mortem examination of some fatal cases showed a number of viscereal hæmorrhages.

Haematuria. Occurs in ten per cent. of the cases according to Heubner and may be the only evidence of this disease. This symptom is not sufficiently appreciated. In Still's cases, 60 per cent. showed hæmaturia. In the collective cases of the American Pediatric Society, it was present in only six per cent. of the cases. A true hæmorrhagic nephritis is, however, rare.

The *Temperature* in about half of the cases is slightly elevated. There is no distinct type and the duration is very variable. Feverish periods may alternate with those of normal temperature.

The onset of scurvy is slow and insidious. The child first seems to lose appetite, is not as playful and does not sleep well.

Some of the more pronounced symptoms may appear suddenly and be mistaken for the results of traumatism.

The *Course* is decidedly chronic. Weeks or months are required for the full development of the clinical picture. A correct diagnosis leads to proper treatment and saves the child. Without this, the condition gets worse until death supervenes. Many early cases in which a change of diet had been made for some reason, recover without the existence of infantile scurvy being suspected.

Prognosis. In few diseases are the results of proper treatment so striking. The pain and tenderness will disappear in forty-eight hours and within a week the child should have entirely recovered. Some symptoms may persist. For instance, it may take many weeks before the thickening of the sub-periosteal hæmorrhages entirely disappear. If the disease is not recognized and therefore not properly treated the child will die after weeks of intense and needless suffering from cardiac weakness, enteritis or pneumonia.

If the above symptoms are carefully considered in conjunction with a history of improper artificial or sterilized food, there should be no difficulty in making a diagnosis. The important point is to make a diagnosis before the disease gains much headway. If a bottle-fed baby becomes anæmic, has swollen, purplish gums, with pain and tenderness at the epiphyseal ends of the long bones, the possibility of this disease should be considered.

The mistakes made in recognizing this disease have been many. They are made mostly by physicians or surgeons who are engaged in some special field of work and see few cases of infant feeding.

Rachitis. Scurvy can be hidden behind an associated rachitis or be mistaken for it even if no symptoms are present. Swelling and sensitiveness at the osteo-cartilaginous border of the ribs is common to both diseases, as is also the progressive anæmia. The gums, and the painful swellings on the long bones are pathognomonic for scurvy. The therapeutic test is here of great value for it will clear up a doubtful case in forty-eight hours.

Syphilis. In syphilitic epiphysitis we get a pseudo paralysis, progressive anæmia, epiphyseal swelling and tenderness. Pseudo paralysis generally occurs under three months in syphilis and in scurvy rarely before 5 months. The skin lesions of syphilis are absent while the swollen gums and hæmorrhages are only seen in scurvy.

Rheumatism. This is a disease only rarely observed in children under two years of age. The swelling being strictly confined to the joints and the local sensation of heat should correct any mistake in diagnosis.

Nephritis. Albumen and blood appearing in the urine with swelling and œdema of the lower extremities, as in one of my cases, may easily lead one to a diagnosis of nephritis. The feeding history, together with the tenderness and disability of the legs and the characteristic appearance of the gums should confirm the diagnosis of scurvy.

Many other and widely different diseases have been diagnosed for this disease. It will be sufficient to simply mention some that have appeared in the literature. Arthritis, periostitis, ostitis, osteomyelitis, osteosarcoma (and several operations have been undertaken only to find a subperiosteal hæmorrhage), paralysis, especially anterior poliomyelitis, hip disease, purpura, pyelitis, dysentery, ileo-colitis and intussusception.

Treatment. In way of prophylaxis it would be well to rectify the diet in every case presenting increasing anæmia, restlessness and hyperæsthesia. Uniformity of diet for many months should be avoided and malnutrition corrected as soon as possible. Scurvy in adults is now a curiosity in medicine, because it is recognized and understood. There is no reason why the same cannot in a few years be said of infantile scurvy.

The treatment of the disease is as simple as it is satisfactory. In the first place, the diet must be corrected. The use of what La Fétra calls "devitalized and sophisticated" foods should be stopped. With the advent of certified milks and clean milks, the necessity for boiling or heating is obviated.

In the second place, some raw fruit juice, beef juice or fresh vegetables should be given. Orang juice is better borne by infants than lemon juice and they can take the juice of a whole orange daily without any bad effect. The beef juice should be freshly prepared from new meat. The canned or bottled beef extracts have no effect.

Still claims that potato is a most potent anti-scorbutic agent, but it is apt to cause digestive disturbance, if used for more than a few weeks. He recommends that the potato be prepared by boiling or steaming in the ordinary way. The outer floury portion is scraped off and thoroughly mixed with milk so as to make a smooth cream. One to two teaspoonsfuls of this potato-cream are given three to four times each day.

The child should be moved and handled as little as possible. It is cruel to dress these little sufferers in their day clothes and they should lie in loose clothing and remain undisturbed as much as possible.

Milk.—COPLANS'S (Lancet, Oct. 19, 1907) experiments show that the factors controlling the growth of organisms in milk are explicable on the grounds of latency and inhibition. Inhibition is a vital property of new milk; it is manifested as a bactericidoinhibitory power towards certain organisms as follows: 1. At air temperature (20 deg. C), slightly bactericidal and absolutely inhibitory for a period of six hours following milking, partially inhibitory for a further period of eighteen hours. 2. At blood heat slightly bactericidal and absolutely inhibitory for a period of one hour; slight growth only in the following hour; partial inhibition during hours two to six. 3. At 0 deg. C. for twenty-four hours; then, when raised to air temperature, absolute inhibition and bactericidal power persist for three hours; partial inhibition for a further period of nine hours. The standard for the rate of increase without inhibition is that which occurs in inoculated boiled milk incubated at like temperature with minimized latency. Latency—this in general indicates the series of phenomena latent period and comparative latency (or quiescence absolute and relative), which first characterizes the growth of organisms when there is alteration in environment—e.g., food supply, acidity, or temperature. Phenomena of expiring latency have the effect of giving rise to the erroneous belief that there have been several additions of organisms to the milk under investigation, by reason of the sudden increases in number at frequent intervals. Latency and inhibition may exist independently or side by side, increasing or masking their several effects. The action of preservatives is to damage the bactericidoinhibitory action of milk as well as to restrain the growth of organisms. The facts relating to the bactericidoinhibitory action of new milk form the basis of a method for estimating within certain limits the period that has elapsed since the time of milking.—N. Y. Med. Journ., Nov. 9, 1907.

EAR TROUBLE IN SCHOOL CHILDREN.*

With Special Reference to the Work of the Department of Health in New York.

By Alfred Michaelis, A. B., M. D.

Otologist, Vanderbilt Clinic, College P. and S., N. Y.

In addressing a body of men interested in the medical examination of the child at school, on the subject of diseases of the ear, it seems best to dwell only on those conditions in the range of ear diseases commonly encountered. An encyclopædic enumeration of all the ear diseases that a child may suffer from is superfluous, since this would not be consonant with the scope of the work or the methods of examination prescribed by the Department of Health for the detection of such disorders.

The figures published by the Department of Health, show that of 97,543 children examined from March, 1905, to June, 1906, 1,936 gave evidence of defective hearing, *i.e.*, about 2%. Of 36,190 first year children, only 6% gave evidence of defective hearing.

These percentages are altogether too low, in the writer's opinion. Yet an examination of about two hundred children according to the method prescribed by the Department of Health, did not seem to produce much variation from these figures.

There is no doubt that this small percentage results from employing the whisper test at twenty feet.

---

*Address to the Medical Inspector's Society of the Department of Health, New York City, at the Academy of Medicine, Nov. 13, 1907.

Prof. Blate of Boston, declares that nearly 25% of all patients attending our aural clinics are children under fourteen years of age. These are probably mostly school children. At the Vanderbilt Clinic, however, no such proportion as one child in every four patients seems to obtain. Roughly speaking, not more than one in every seven or eight seems to be the figure.

The reason for the small number of ear troubles reported by the Department of Health has been alluded to; and in trying to account for the small number of children brought to the Clinic it seems that a number of causes are at work. First of all, parents of the class that visit free clinics do not always bother about ailments until their symptoms are pronounced. In the next place, indifference and neglect, conditioned by ignorance and poverty, play a part; and lastly, certain superstitions, often fostered by the general practitioner, keep away many children of tender years and also those of school age. Among these may be mentioned that venerable, and, among the laity, much revered cause of running ears—the cutting of teeth. Another reason is found in the oft-heard statement of neglectful parents—"We thought the child would outgrow it."

In order to justify his opinion that ear troubles are more frequent in children than the above statistics indicate, the writer desires to state several general propositions.

First: Ear troubles and particularly the chronic and subchronic catarrhal inflammation of the middle ear are common in children of school age.

Second: Not all of the children so affected give symptoms discoverable by the test above referred to.

Third: The development of this condition is often so insidious and so very slow that it has generally existed long before the test will disclose its presence.

Fourth: Many of these cases resolve without ever giving symptoms in childhood.

Fifth: *The foundations of deafness in later life are, in most instances, laid in childhood.*

If it is conceded that all this is true, how, then, can these cases be discovered?

An examination of the drum coupled with more extended tests of the hearing is the only solution. This, however, is outside of the School Inspector's routine of examination. Moreover, the writer has long entertained the theory that the drum is a pretty faithful mirror of any disorder of the throat and nose, and in support of this idea has examined the drums of a number of school children. There is not the least doubt in his mind that pathological conditions of throat or nose may be indicated by an examination of the drum alone.

A brief review of some of the more common conditions in children of school age discloses that the EXTERNAL EAR is occasionally malformed. The various deformities, even atresia of the canal, need not necessarily cause deafness. The canal is frequently more or less obstructed by masses of cerumen. This may or may not produce deafness. Foreign bodies in the canal of a character too numerous to mention, either placed there wilfully or entering by chance, are not uncommon in children. To these few conditions add eczema of the canal and ear from irritation by discharges.

In taking up the topic of MIDDLE EAR disease we have to deal with two great classifications—the purulent, whose principal determining symptom in the school child is a discharge of pus from the middle ear; and the catarrhal, whose principal symptom is deafness of different degrees. It is needless to enter here into the pathology of both of these conditions, or to discuss the causes of either. This knowledge should be as familiar as the A B C is to every examiner. As examiners of school children the end result of both these conditions, namely, deafness, should be our chief concern.

A brief discussion of the tests for determining deafness is inseparable from an allusion to that symptom of ear disease. At the outset it must be said that an accurate determination of the function of the auditory nerve is quite difficult. Compared to an examination of the function of the optic nerve it is also very inexact. The examination of the eye has been reduced to mathematical precision, due altogether to the anatomy of that organ. There is no instrument for the ear comparable to the ophthalmoscope. We may test the hearing with a watch. First, however, we must determine the normal distance for the particular watch used, a time consuming procedure. Tuning forks and the acoumeter are largely used by aurists. They do not at present enter into the school examiner's scheme of tests. The voice test being the only one prescribed a little more must be said about it. The

Department of Health has established the rule that any child which hears the whispered voice at a distance of twenty feet may be considered to have normal hearing. Opposed to this we have the views of different European aurists who have variously fixed the normal hearing distance for the whispered voice at from 20 to 26 meters.

Oscar Wolf, the result of whose experiments have been generally accepted as most exact, finds that 20 to 21 meters is the normal. This expressed in feet is three times the distance established by the Department of Health. Viewed from this standpoint, the writer's contention seems fortified that its figures are too low for ear troubles in school children.

In testing with the voice a few facts should be borne in mind. Sibilant sounds are most easily heard; explosive consonants like B, K and T come next; and sounds like U and R appear to carry the least distance full. Among the vowel sounds A, E and I, carry further than O and U. Words embodying these few principles should therefore be selected as test words. If we add to this, that the character of the room, the timbre of the examiner's voice, the state of the weather and, last but not least, the *personal equation of each child,* influence the test, it will at once appear that preciseness is well nigh impossible.

Beset by these difficulties, and because he cannot spend too much time in the examination of one organ to the neglect of others, the examiner's work has necessarily been brief, elementary, and inexact.

Affections of the INNER EAR are more common in school children than one would imagine. Reference is had here to nerve deafness. The writer has found that one or both sides may be involved. The voice test will not serve to differentiate this trouble from the other two deafnesses producing diseases of the middle ear. The tuning fork test reveals these cases. Of course, those unfortunate children, both of whose nerves are badly affected are hardly ever found in school. As a rule this destruction has taken place before speech is fully developed and the loss of hearing soon causes gradual loss of speech. In other words, deafmutism results.

The following series of examinations of the ears of school children with speculum and mirror support to a degree some of the theories advanced. Primarily, a view of the drum was sought. The voice test was tried on those children of riper understanding. The throat and nose were also investigated whenever an abnormal looking drum was found. Such drums were not infrequently encountered even where no marked throat or nose disorders existed. Without doubt a closer examination of these cases would uncover some abnormality of throat or nose to account for the abnormal drum.

Series 1: Includes 60 children; average age, 11-12 years, constituting one entire class and part of another:

Normal	29
Not Normal	26
Cerumen	5

The changes in the drums of the twenty-six cases considered abnormal varied from the slightest to the most pronounced lesions. A detailed description of these lesions would be more comprehensible to the aurist, than to the examiner not so familiar with ear disorders. Suffice it to say that twenty-six out of sixty children showed drums that varied from the normal. Yet only one heard poorly, and one other was entirely deaf on one side. This was later found to be a case of unilateral nerve deafness, by the tuning-fork test. The impression given by these twenty-six cases was, that at some time or another the pupil had had some sort of inflammation in his tympanic cavity. The type was either that of the dry stage, or the stage of resolution, or the productive stage, of inflammation.

Series 2: Includes 9 children, average age 7-8 years; selected from one class, and all apparently mouth breathers:

Normal	3
Abnormal	6

A notable fact about six abnormal cases is that the variations from the normal were not slight in some instances, like the preceding series. All six cases were very well marked. This was to be expected when mouth breathers were selected.

The inflammation was of a more active type than in the preceding series. The stage of veinous stasis and the stage of succulent infiltration was the type in the cycle of inflammation. None were deaf by the voice test.

Series 3: Includes 8 children, average 8-9 years. Selected from one class, and all apparently mouth breathers:

Normal	0
Abnormal	8

The same remarks apply as for Series 3.

Series 4: Includes 5 children, average age 5-6 years. All mouth breathers. Selected from a kindergarten class.

Normal	0
Abnormal	5

Of these five children two were noticeably hard of hearing. The type of change was like that in Series 3, and even more pronounced.

Series 5: Includes 5 children from the same kindergarten class, selected at random, without reference to nose or throat disorders:

Normal	1
Abnormal	4

The changes were quite well marked in the four cases. None of them was hard of hearing.

A comparison of the results of the examination of these five groups showed almost a gradation in the departure from the normal appearance of the drum. The youngest children showed the most marked and most recent processes. The oldest group showed signs of inflammation that had subsided, or of conditions dating further back. The findings in the latter series are still more suggestive when it is considered that these were not selected cases, but a class examined *en bloc.*

The results of the examination of the selected cases are not surprising when viewed in the light of the etiology of chronic ear troubles. Adenoids, hypertrophied tonsils, and nasal disease were looked for in all cases. Enlargement of those cervical glands draining the nasal, pharyngeal and post-pharyngeal areas was considered evidence of disorder in these regions even when no abnormality was visible by the cursory examination conducted. The writer considers this a fairly good diagnostic sign when a more intimate examination of nose and throat is not feasible.

The impression should not prevail, however, that all children whose drum membranes show slight or moderate changes, should, in the absence of symptoms, be classified as cases of ear diseases when we compile our statistics. The figures would then err on the side of undue elevation. But the objective findings support entirely the propositions enunciated at the outset. Not all cases of chronic or subchronic middle ear catarrh are noticeably deaf and many resolve without ever giving rise to symptoms in childhood. The traces of such disturbance remain in most cases. This was exemplified in the first series. If the cause producing these changes is not discovered and removed, there is no reason why, at some time or another, there will not be another and more enduring inflammation of the middle ear.

Many adults who suffer from deafness maintain that they never had any trouble in childhood. Yet the stigmata of nose or throat disease in childhood persist, and disprove such statements. Doubtless they were in the same category as the twenty-six children of Series 1, and vice versa many of these twenty-six are deaf adults potentially.

In the absence of a more extended method of examining the ears of school children than that prescribed, the writer can suggest only what would be the natural deduction from the facts related above—early and thorough prophylaxis. This is to a large degree accomplished by the pretty thorough examination of the throats and noses of the children, and it is in this way that the shortcomings of the aural examination are balanced.

There is no need to enlarge on the fact, that the cause being established and removed, the possible and probable sequelæ are avoided. The excellent work in this direction allows the prediction that when the present generation of school children has reached adult or middle age there will be far fewer men and women afflicted with chronic deafness than are found at present.

Care of Tuberculous Children.—KELYNACK (British Med. Journ., Sept. 21, '07) insists on the importance of anticipating the development of tuberculosis in children and condemns the system of mixing children and adults in the same sanatorium. Special sanatoriums for children are urgently required. A marine situation is, on the whole, less advantageous for the majority of patients than a high and dry sheltered inland station.—Journ. A. M. A.

MATERNAL IMPRESSIONS.

By Edwin Taylor Shelly, M. D.

In the November number of the *Archives of Pediatrics* appeared a paper read before the Philadelphia Pediatric Society, by Dr. J. T. Rugh, on "Maternal Impressions, with Report of a Case." The case reported was one of congenital absence of the third and fourth fingers and the corresponding metacarpal bones in a healthy boy six years of age, whose mother had been shocked during the sixth week of pregnancy by discovering that a friend of hers had lost, from his left hand, the third and fourth fingers and their metacarpal bones. Subsequent to the birth of this boy the mother had two other children who were perfectly normal.

Reasoning from the facts as stated, isn't it rather remarkable that the psychic dynamics, effectively called into action by the shock and grief experienced by the expectant mother at seeing the deformed hand of a friend, failed to act in two later pregnancies when she witnessed not only the deformed hand of a friend, but the deformed hands of her own child as well?

If one crippled hand could produce, by the power of mental impressions, two crippled hands, why was it that three crippled hands, under far more distressing conditions, failed to produce even one crippled hand, especially after the woman's impressionable nervous organism knew how? Had the mother before her third pregnancy successfully anticipated the "marking" powers of maternal impressions by joining a Don't Worry Club; or had she become one of the grandly placid stoics of the school of therapeutic neo-pantheism instituted by the muddled Madonna of Concord?

Dr. Rugh complains because teratologists, while denying the power of maternal impressions to produce fetal deformities, fail to "offer another theory that will prove a better substitute." It is unfortunately too true, as teratologists regretfully admit, that there still remain vast areas in the domain of teratology to be explored and developed; but it so happens that at least one of Dr. Rugh's cases is not hidden in teratological territory wholly uncultivated.

Ballantyne, in his Antenatal Pathology and Hygiene, says: "When the amnion does not separate over any part of the embryo, it leads to compression of that part, perhaps also to the fusion of contiguous structures in that part which ought to have remained separate, and so malformations of that compressed region are produced. * * * * * * For some years back amniotic pressure has been the most popular theory of teratogenesis among teratologists. The exact mode of action of the pressure has been supposed to be by causing arrestment of the ontogenetic processes going on in the developing embryo," and the results may be seen "in monstrous parts surrounded by normal structures." By the so-called "pressure theory," Dr. Rugh's case may be explained as follows: The amniotic sack surrounding the embryo having probably been a little too tight, or the quantity of amniotic liquid somewhat too scant, the amnion pressed on, or temporarily adhered to, the ulnar side of the distal portion of each "arm-bud" soon after it appeared, about the fourth or fifth week of embryonic life, and thereby checked the "sprouting" of the third and fourth fingers and their metacarpal bones, and also caused the webbing of the fingers of the left hand. Perhaps a careful examination of the deformed limbs might also show that the normal development of some of the carpal bones and of one or both ulnas had been interfered with.

In spite of Dr. Rugh's protest that negative evidence is of "no value whatsoever in consideration of the theory" (of impressionism), its consideration is nevertheless believed to be quite justifiable. As an instance, he cites a congenital blister case following scalding of the mother. Very many still-born children, and some that are not still-born, have blisters on their bodies. Because in one case out of a thousand, perhaps, the mother had, a day or two before, been scalded, does that fact lend plausibility to the notion that the natural cause or causes which had operated in the other nine hundred and ninety-nine cases had been supplanted in the one case by hocus pocus? Could "nature faking" go farther?

Other negative evidence is noted by the writer in a paper on

"Congenital Fetal Malformations," in American Medicine, July, 1907, as follows:

Let us look at the well-known anatomic and physiologic relationships between mother and fetus. During the first few weeks of fetal life—when teratologic aberrations originate—the bond of union between the impregnated ovum and the womb is so feeble that, were it not for the practical difficulties involved, the embryo might be transferred to another womb without interrupting its development, as has been done in some of the lower animals.

Whenever this experiment is successfully performed, the transplanted embryo never takes on any of the special characteristics of the "new" mother but retains at birth and thereafter only those of its "original" parents.

Even in the later months of pregnancy the relationship between these two individuals continues to be one of contiguity only, never one of continuity. That is, there are no certain maternal structures continuous with similar fetal structures. Even the blood of the mother and the blood of the fetus mingle only by osmosis of their soluble contents. Between their respective nervous systems—over which maternal impressions would surely have to travel—there is an unbridged chasm as wide as the combined length of the umbilical cord and the thickness of the placenta. By this arrangement, which is physiologically no more intimate than that between the sitting hen and her unhatched chicks, nature surely must succeed in protecting the embryo from any temporary ills, especially nervous disturbances, which may befall the mother.

This arrangement does not, of course, preclude the possibility of the transmission of toxins from the blood of the mother to that of the fetus. Protracted maternal distress and starvation, such as undoubtedly existed during the siege of Paris, might, therefore, quite possibly result in retarded and defective development of the fetus; but to ascribe such action to "maternal impressions" is to do violence to the usual meaning attributed to that term.

In view of the generally accepted facts of embryology, only a few of which have here been touched upon, how can such a fanciful explanation as the theory of maternal impressions supplied be entertained by scientific medical men? Surely they ought to be beyond the *post hoc ergo propter hoc* stage of accounting for the occurrence of unusual natural phenomena.

Dr. Rugh says: "The testimony of leading medical men in past centuries favors the theory, and the leading obstetricians of the present day refuse to deny, even if they do not subscribe to it,"—all of which is true, provided he limits his "leading obstetricians" only to those of Philadelphia and a few of those in New York. Outside of those two cities, the maternal impression theory is quite generally looked upon as only a cruel, Sairey Gampian anachronism, and has few adherents among leading obstetricians in this country or abroad. The same holds true also as to leading medical men everywhere.

How could the science of teratology ever advance if medical men in general were to look upon a case of congenital deformity, not as an opportunity for serious scientific investigation, but as an excuse for foolish speculation about the kind of mental annoyance the mother must have undergone in order to produce such abnormality?

As we try to contemplate, in our feeble way, the infinitely delicate technique by which nature makes and fashions and arranges from memory, in two hundred and eighty days, without model or mold or measure, a countless array of diverse cells into that supremest product of the wondrous loom of life, that pink and boisterous miracle, a perfect babe, must we go to an uncanny superstition to learn why, now and then, some pigmy artisan in atoms, among the busy myriads in the workshop of ontogenesis, proves unequal to his task, to learn why nature cannot always be inerrant?

Atchison, Kansas.

A SUB-NORMAL TEMPERATURE OF 80 DEGREES F. IN A NEW-BORN INFANT.

By Frederic W. Loughran, M.D.

The history of this interesting case is as follows: Blanch D., born September 1st, 1907. Mother and father both 36 years of age. Family history negative. One other child 2½ years of age, in good health. Labor normal, lasting about four hours. Baby weighed at birth 8½ pounds. Was well nourished and normal in every respect. The child presented no unusual condition until the 4th day when the nurse reported a temperature of 106 with symptoms of a slight cold. A careful examination elicited no physical signs. The child coughed three or four times during the 24 hours. The following day the temperature had fallen to 104 and a slight discharge was noticed from the umbilicus, the cord coming off this day. For the next two weeks the temperature remained high, there were few or no other noticeable symptoms, the mother having an abundance of milk, the child apparently taking the usual amount and at regular intervals. The bowels moved two or three times a day, stools almost jet black in color, resembling meconium. I examined them for blood with a negative result. The urine at this time was also examined and found to be normal. At about the beginning of the third week the mother lost her milk and the baby was put upon a weak mixture of whey, but was unable to retain it and condensed milk was substituted by the mother, which the child took until within a few days of its death. The weight failed rapidly and until now, the symptoms which had been very indefinite, became more pronounced. The skin was yellow, pulse very rapid and of poor quality and generally lost at the wrist, the respiration being disturbed and very shallow. The baby became restless and irritable with muscular twitchings, stupor alternating with convulsive movements. The abdomen was swollen and tender and at times I could, by pressing on the abdominal wall, toward the umbilicus, squeeze out a few drops of a purulent matter. The spleen or liver were not enlarged or palpable. From the above symptoms I made a diagnosis of a *septic infection*, the point of entry being the umbilicus. These symptoms continued for about the next ten days or two weeks. The emaciation increased rapidly, the child being in a stupor most of the time, occasionally giving forth a weak, pitiful cry. She, however, took her nourishment regularly and with apparent avidity. The feces, while generally dark in color, at times showed light yellow streaks. A second examination of the stools for blood was negative.

At my solicitation and with the approval of the parents, the child was sent to the Post Graduate Hospital on Oct. 6th, she having shown some little improvement during the preceding few days, with a noticeable lowering of the temperature, but on Wednesday, Oct. 9th, the parents were requested to remove the child on account of a vulvo-vaginitis. I found her much in the same condition as before. For one or two days the temperature was normal. As it was impossible for the mother to take care of the baby I sent the little one to the home of a trained nurse on Oct. 14th, and on Oct. 16th was requested by the nurse to call. She told me the baby was dying. Upon examination I found the infant had failed rapidly, it being in a partial stupor, its eyes open and glassy, its respiration and pulse almost imperceptible. The nurse informed me that since the baby had been in her home she had been unable to get her thermometer to register above the lowest point to which it could be shaken down, which was about 91 degrees F. I thought there must be something wrong with her thermometer and tried my own, first shaking the column of mercury down to its lowest point, about 91 degrees, but found that it did not rise. It occurred to me that perhaps my thermometer might not register when shaken down so low and tried it together with hers on another infant in the house and found both of them to register 99 degrees F. She said that the baby had felt, ever since its admission, as cold as death, although she had had it surrounded with hot water bottles. This to my touch was true. I then took an ordinary thermometer and removed it from its scale, inserted it in the baby's rectum and left it for ten minutes, marking the head of the column of mercury. I then affixed it to its standard and to my astonishment found that it registered but 80 degrees F. I again repeated this procedure and then tested the thermometer with two other thermometers, immersing them first in hot water and then in cold and found that they all agreed. I also placed the same thermometer in the rectum of the baby whose temperature I had accertained by my instrument to be 99 degrees F., and found it registered the same. The child was taking, but retained only at rare intervals a small quantity of weak whey mixture. The following afternoon at 2 o'clock I obtained a registered bath thermometer and found, after leaving it in the rectum for ten minutes that the temperature registered 84 degrees F. I compared it with my own thermometer and found that they both agreed.

At 9 o'clock Dr. Godfrey R. Pisek saw the patient with me and his notes of the case are as follows: "Weight, 5 lbs., 3 oz. Respiration, 21 to the minute. Pulse, 72. Heart count, 80 per min. Percussion, slight dullness over the right apex. Auscultation, heart action extremely feeble. Temperature under the axilla with a registered milk thermometer 84 degrees F. In the rectum for ten minutes, 85 degrees. With my thermometer and with the other thermometers in the rectum, 85 degrees F. Temperature of the room, 72 degrees F.

The child died the following morning, that is on Oct. 18th, at 6 o'clock. At 3 a. m., when the nurse took the temperature the thermometer registered 78 degrees F. At 9 o'clock in the evening of the 18th, an autopsy was performed by Dr. Pisek and myself, Dr. Pisek taking the notes, which are as follows:

AUTOPSY.

Baby. Blanche D. October 18th, 1907.

Body that of an emaciated female infant.

Rigor mortis absent. Thumbs held within the flexed fingers.

Sup. Exam. Abd. Liver normal in size.

Intestine and stomach—pale—stomach—markedly distended.

Vermiform app. Vessels much congested.

Spleen—normal in size, marked congestion; cut surface—negative.

Liver—normal consistency, markedly congested.

Kidneys—outer surface—heaped up fetal irregularity and enlarged pelvis, cloudy swelling.

Stomach—M. M. pale, with areas of congestion.

Intestine—M. M. as in stomach.

Pericardial sac—contains two drams of fluid.

Heart, myacardium pale, otherwise negative.

Lungs—apex right upper lobe, emphysema, hypostatic congestion and œdema.

Brain. Extravasation into ventricles; ependyma much congested.

A hasty survey of the literature on low temperatures shows the following:

George Glasser, in a pamphlet entitled, "About the existence and causes of low Temperatures," published in Berne in 1878, says of a case of Hydrocephalus that was admitted to the hospital: "Upon admission the axilliary temperature was 83 degrees F. The second day in the morning it was 87 by rectum and 87.8 in the afternoon. On the 3rd day 86, on the 4th day 80.6 just before death."

In a case of Cerebral Hemorrhage in an adult, the temperature was 86.2. In an injury to the spine 93, and in a case of incarcerated hernia, Kocher observed it to fall to 93, while an impacted gall stone case fell to 92.

Miller in Zurich found the temperature in a case of pernicious anæmia to be 81.

Glasser, in a case of Nephritis, found the temperature to be 83 degrees F.

Wunderlich, in a case of syphilitic Marasmus, observed a temperature of 83 degrees F.

Fred. Colley saw a case of Typhoid with a temperature of 84.2 and Quincke, in an old decrepit woman, found a temperature of 79 degrees F.

KINGS COUNTY MEDICAL SOCIETY.

Section on Pediatrics.

Stated Meeting held Nov. 20, 1907.

Dr. Louis C. Ager, Chairman.

The paper of the evening, by F. A. Gough, D. D. S., entitled, "Orthodontia as a Factor in Child Development," was illustrated by a number of excellent lantern slides.

The word *Orthodontia* is derived from two Greek words—*orthos,* straight, and *adons,* tooth—and thus means literally, straight teeth. But like most words which have come down to us from the older languages, it has come to have a broader meaning. Dr. Edward H. Angle, who was probably the first to recognize the need of separating the practice of orthodontia from dentistry, defines the word as follows: "Orthodontia is that science which has for its object the correction of malocclusion of the teeth." It has also been defined as: "The science of normal occlusion of the teeth, and the art of restoring it." Occlusion, as applied to orthodontia, is "The normal relations of the inclined planes of the teeth, when the jaws are closed."

Normal occlusion is impossible unless the full complement of teeth is present. In all classes, distorted features, and unattractive or deformed faces are prevalent, due entirely to irregular teeth. These defects in the teeth are due to lack of cleanliness, to fine, soft prepared foods, which do not allow the teeth their proper share of work, and to the American habit of bolting the food.

The perfect denture in normal use is practically self-cleansing, while in those mouths where malocclusion exists, the crowded and overlapping teeth form triangular spaces, which it is almost impossible to keep clean.

To insure immunity from dental ills, and to guard the general health against infectious diseases, the denture must be complete. the arch symmetrical, the occlusion perfect, and the mastication normal. Thus it is of extreme importance to save the deciduous teeth until their mission is accomplished. If they are extracted prematurely, the socket will form with new osseous tissue, hard enough in many cases to turn the permanent teeth from their proper positions.

The great fallacy, so long prevalent, of advising patients to delay orthodontic treatment until all the permanent teeth have erupted, is rapidly disappearing, and the dentists of to-day are beginning to realize that the erupting teeth migrate just where-ever the mechanical forces of mastication compel them to, and that the alveolar process follows, and is built up around them, wherever they erupt; the size and shape of the jaw being thus influenced by the arrangement of the teeth.

The relation of nasal obstructions to irregularities of the teeth, is of much importance, and it is certain that no matter how complete the work of the rhinologist may be, if the cusps of the teeth have come into cramped positions, normal breathing cannot be established without orthodontic interference. When we remember that the roof of the mouth is the floor of the nose, it it easy to see that a contracted upper arch will invariably be accompanied by restricted nasal passages. The amount of improvement obtainable in such cases, depends upon the age of the patient. The younger the patient, the more marked will be the good result.

DISCUSSION.

Dr. Ludlow asked whether the deciduous teeth should be removed as soon as they become loose, or whether they should be allowed to drop out naturally.

Dr. Gough replied that they should be removed only when the new tooth is seen to be erupting in bad position. Otherwise the child should be allowed to get them out in his own way. It is possible to determine from the deciduous teeth, whether the permanent teeth will or will not appear in perfect alignment, and if the first teeth are corrected, the second teeth will come in straight. Even the youngest children bear corrective appliances well. Their teeth are more sensitive than those of the adult—their gums less so.

Dr. Beck asked for information regarding the effect of "Comforters" on the teeth and jaws, and Dr. Gough in reply, cited some of the many ways in which these appliances could do permanent harm.

Dr. Spingarn asked whether a deciduous tooth nearly ready to come out, should be filled; whether there were any hereditary influences at work in the development of faulty alignment; and whether there were any reasons for the superstition that removal of an "eye tooth" might be followed by injury to the eye.

Dr. Gough replied that the deciduous teeth should not only be filled, but that they should be filled with some substance that will not wear away. Cement, and other fillings of that class, are not to be recommended. In reply to the second question, it is not believed that heredity has much to do with the development of malocclusion. As to the "eye teeth," there is no reason why they should not be removed if necessary. It is more generally the bicuspids or molars which penetrate the antrum; so that infection would not be very likely to reach this cavity by way of the canine sockets.

Dr. Smith, to emphasize the carelessness that prevails in regard to the care of children's teeth, reported 500 cases whose teeth he had recently examined. 56% of these 500 children had from 1 to 12 decayed teeth.

Dr. Hutchinson asked whether constitutional treatment, as for rachitis or malnutrition, had had any part in the excellent results which Dr. Gough's slides showed to have been obtained.

Dr. Gough replied that none of these cases had been under medical care, but thought that in some cases it would be of distinct advantage to have the local treatment supplemented by general remedial measures.

Dr. Parrish asked whether the presence of adenoids and hypertrophied tonsils was responsible for the deformities discussed in the paper.

Dr. Gough replied that protrusion of the upper, and retrusion of the lower jaw, were nearly always caused by adenoids and enlarged tonsils. These cases make up about 40% of all the cases treated. Perhaps the same factors produce both conditions —the jaw deformities as well as the adenoids and enlarged tonsils. This matter is not entirely decided.

Dr. Ager emphasized the importance of proper care of the deciduous teeth.

Dr. Crawford asked whether there were a free dental clinic in Brooklyn, where dental work other than extraction could be done.

Dr. Gough replied he thought not.

RECURRING SCARLET FEVER.

Selma H., aged 11, born deaf, was admitted as a pupil at the New York Institution for the Instruction of the Deaf two years ago.

Family, personal histories negative. Was taken ill May 19th, 1907, with scarlet fever, there being 31 other pupils at the Institution ill with the same disease at the same time.

Selma ran the usual course of a moderately severe scarlet fever, with well-marked eruption, typical appearance of tongue and throat, and this was followed by free desquemation and a moderate albuminuria.

On Nov. 15th, 1907, six months later, she was again taken ill, the usual signs and eymptoms of scarlet fever of a rather severer grade than the first. This time there were six other pupils from the same dormitory ill with scarlet fever.

She is now desquamating very freely (3½ weeks after onset of disease).

Both of these attacks occurred in my service and I have no hesitancy in pronouncing them scarlet fever. I do not see how either could be called Duke's Disease.

EDWARD H. ROGERS, M.D.

Lumbar Puncture for the Diagnosis and Treatment of Cerebrospinal Meningitis.—CALABRESI AND CLERC (Gazzetta degli Ospedali, Milan, Aug. 4, '07) find that in cases of cerebrospinal meningitis in which the meningococcus is not demonstrable, the diagnosis can be aided by noting in the cerebrospinal fluid—obtained by lumbar puncture during the regression of the morbid process—a progressive increase of the lymphocytes together with a progressive diminution of the polynuclear leucocytes. The therapeutic value of lumbar puncture is shown in the relief of symptoms and, as they believe, also in the hastening of recovery in a case reported.—Journ. A. M. A.

PEDIATRICS

FREDERIC W. LOUGHRAN, M.D., Editor
Editorial Office: 742 Prospect Avenue, New York City.

Published Monthly by F. M. CROSSETT CO., Inc., 156 Fifth Ave., New York
Telephone 1032 Gramercy.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries, $2.50 a year.

ADVERTISING RATES will be furnished on Application.

Entered as Second class matter at the New York, N. Y., Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The International Congress on Tuberculosis will be held in Washington, D. C., from Sept. 21st to Oct. 12th, 1908. The second week will be reserved for the reading of communications and for discussion. The languages of the Congress will be English, French, German and Spanish. The subject of Tuberculosis in Children is assigned to the Fourth Section, under the presidency of Dr. Abraham Jacobi, of 19 East 47th St., New York City, with Dr. David Bovaird, Jr., of 126 West 58th St., New

York City, and Dr. Frank S. Churchill, of 439 North State St., Chicago, Ill., as secretaries. Every effort is being made to secure such co-operation of the medical profession as will make the work of the section representative and truly international.

The officers of the section invite the aid of all who may be interested in the subject and will be glad to give any information desired.

The following subjects will be discussed:

Literature before 1882. After 1882.

Tuberculosis.—Acute, Chronic, Dormant, Latent.

Heredity.—Sperma, Ovum, Placenta, Fetus, Congenital, Heredity of "disposition."

Anatomy.—Condition of mucous membranes in the newly born, and of its epithelium. Heart and arteries. Size of lungs. Upper thorax aperture. Habitus phthisicus. Size of nares. Lymph apparatus of nares, nasopharynx, pharynx.

Relation to Other Organs.—Is there a general inferiority in tuberculosis (morphological or functional?)

General or Local Overgrowth Connected with Tuberculosis.—Condition of skin. Connection with nævi. Abnormal nipple as sometimes in the adult? Connection with diabetes in infancy and childhood.

Body Weight.

Localization.

Lungs.—Differences according to ages? Puberty. Hæmoptoe. How frequent are cavities? Pneumothorax? Diagnosis by sputum. From peribronchitis, chronic catarrh, chronic pneumonia. By tuberculin. By agglutination.

Relative frequency, by bovine infection, of lung disease compared with that of other organs.

How frequent is expectoration? Influence of schools.

Are children or teachers more dangerous?

Serous Membranes—Pleura, Peritoneum, Pericardium, Dura mater.

Bones—Growth increased? Mastoid. Other localizations.

Different Forms of Meningitis, according to ages.—Ependyma Cerebro-spinal fluid. Choroid. Heart. Blood vessels.

Digestive Organs.—Mouth and throat. Intestinal mucous membrane. Its perviousness. Spleen. Liver. Kidney.

Ureter. Bladder. Testes. Ovary. Uterus. Mamma. Ovum. Rectum.

Invasion.

Inhalation.—Waldeyer ring. Adenoids. Tonsils. Mouth. Intestine. Skin. Smallest vessels first seat of deposit. Adenitis—cervical, tracheo-bronchial, mesenteric. Relation to "colds." To scrofula.

Causes.

Social Elements.—Modern industry. Trade. Endemic influence.

Trauma.

Atavism.

Parentage.—Syphilitic. Alcoholic.

Influence of the Poor on the General Population.

Bovine Bacillus More Dangerous to the Young?

Infectious Diseases.—Measles. Whooping cough. Influenza.

Constitutional Ailments.—Rachitis. Catarrh.

Meat?

Uniformity of "Percentage" Feeding.—Fat Feeding.

Milk—according to Koch and Behring.

Formalin and other poisonous preservatives.

Treatment.—*Prophylaxis.*—Spontaneous recovery. Diminution of infant mortality. Infant feeding. Fat feeding. Formalin. Beef. Pasteurization or sterilization. Compulsory? How long? Contraindication to breast feeding.

Hygiene of mouth. Nares. Pharynx. Intestine. Skin. Mucous membrane in general. Lymph bodies. Lungs. Prevention of "colds."

Bathing.—Temperature of water. Temperature of air. Clothing. Question of "night air." Climate. Altitude.

Home air-treatment. Gymnastics.

Sanatoria.—Western Hemisphere. Sanatoria Eastern Hemisphere. Watching and shortening symptoms of whooping cough, measles, influenza.

Hospital Treatment of Tuberculosis?

Schooling.—Age and methods of immunization.

Drugs.—Guaiacol, creosote, arsenic, cod liver oil, phosphorous, hypophosphites, cardiac stimulants, sera.

Orthopedic and operative treatment p.r.n. Treatment of "Scrofula," skin and mucous membranes.

ABSTRACTS

A Case of Gonorrheal Stomatitis and Septicaemia in a Child of Two Years.—Mario Flamini (Rivista di Clinica Pediatrica). We must surely feel indebted to Dr. Mario Flamini for relating to us a case which, the etiological factor having been established without reasonable doubt, offers features of great interest both to the dermatologist and the pediatrist.

A bulb syringe infected with gonorrheal poison, accidentally brought in contact with the oral mucous membrane of a child, after 3-4 days caused redness, swelling and ulceration of the mucous membrane, followed in a few days by a fever of a remittent type with nightly exacerbations.

After a period of again 3-4 days an eruption, first on the trunk, then on the face, appeared—like measles, as the father said. The fever rose coincidently with the appearance of the eruption.

The eruption then faded, and soon disappeared; not so the fever, which continued.

The parents noticed now that the left shoulder became inflamed, was painful at any attempt to move the corresponding arm. When the child came under his (Dr. Flamini's) observation it was much exhausted, pallid; the upper lip swollen, the mucous membrane of lips and mouth ulcerated in a ragged form, oval and circular manner, covered by a yellowish and purulent exudation. Mastication was almost impossible on account of pain.

The treatment consisted in the application of nitrate of silver solution 1:100, and subsequent ablutions with salt water three times a day.

Under the above treatment the condition of the child improved after an illness of 28 days' duration. When on the 31st day the parents took him home, the stomatitis was cured and at home the fever gradually subsided. No intestinal symptoms were ever observed nor was there ever more than a trace of albumen in the urine.

Although convalescence was slow, the child at present is perfectly well.

The elaborate microscopical examinations of the exudate showed abundant polynuclear leucocytes and diplococci of the coffee bean shape, which colored well with Löffler blue and were completely discolored on the addition of Gram. Similar results were obtained from blood cultures, the blood having been withdrawn from a vein.

Two conditions of great interest were present here: A stomatitis of gonorrheal origin, and secondarily a septicæmia caused by a diplococcus presenting all morphological and cultural characteristics of the one of Neisser.

In resuming, we have here a case showing a gonorrheal infection of the mucous membrane of the mouth,—probably less resistant and offering a more habitable field for the microorganism, because of a child—symptoms of septicæmia accompanied by a morbilli form eruption and an arthritis of the shoulder.

E. W. Dittrich.

Mucus and Lumps in Infants' Stools.—Dr. Godfrey R. Pisek (Journal of the Medical Society of New Jersey, July, 1907) very clearly and simply makes the followings points:

True curds are formed in the stomach by the action of lactic acid, or an excess of hydrochloric acid, on the paracasein. They are hard, smooth, yellowish on outside, and white within, with a cheesy odor when opened, and will not dissolve in ether. A loose, greasy, sour,smelling, acid movement, resembling scrambled eggs, will indicate excessive fat in the dietary.

Mothers often erroneously describe the large quantities of mucus present in the baby's stools. The doctor must remember that some mucus is normal; that it should then, however, be found intimately mixed with the feces. That barley water produces a slimy stool often mistaken for mucus, and that undigested food elements also cause this error. If mucus is seen in any quantity with the naked eye by a competent observer, it is pathological and means inflammation, usually located in the large intestine, of a subacute or chronic form. If the disease is in the small intestine the mucus is mixed with the stool and it is usually found to be bile stained.

The color question in the stools (like the color question in the South) is often perplexing, worthy of study, and not yet decided. The color of the stools when immediately passed should be considered. If the absorptive process has been delayed and putrefactive changes have taken place in the proteid element the bilirubin will be changed to biliverdin, but it is not known whether the reaction itself, or chromogenic bacteria produce the coloration. Nitric acid will prove whether or not we are dealing with bile salts by the familiar play of colors.

The green color in conjunction with mucus and fecal acid reaction indicates true intestinal disease and calls for radical change in the dietary.

The brownish movements often seen, if we exclude certain drugs and blood, are due to the ingestion of undextrinized starches alone, or a preponderance of carbohydrates in proprietary infant foods. A stool that presents a foamy, bubbling appearance and is acid in reaction will signify the presence of too much sugar in the mixture, as is often the case in condensed milk feedings.

The reaction of the stool is a help and should be ascertained and always taken from the middle of the fresh stool. If a blue color is obtained, we have alkaline proteid putrefaction going on, and if the color of the litmus is unchanged, we have acid fermentation due to the breaking down of the fats and carbohydrates.—Annals of Gyn. & Ped., Oct., 1907.

The Unborn Child.—Helme (Brit. Med. Journ.) states that we must recognize the rights of the unborn child: 1. To life. 2. To protection from the hereditary taint of degeneracy. 3. To health, that is, to conditions conducive to the safeguarding of its health. 4. To Nature's food (when born), that is, its mother's milk. 5. To its natural protection (when born), that is, its mother's care. The recognition of these rights demands the recognition of the following duties on the part of the parents, the profession, and the State: 1. On the part of the parents; a clean and normal life before and after conception. 2. On the part of the mother. a. The consistent regulation of her mode of life. b. The abstention from alcohol. c. The feeding of the child by the breast. d. The care of the child after birth. 3. On the part of the medical profession. a. The restriction of therapeutical fœticide. b. The education of a healthy public opinion. 4. On the part of the State. a. Restriction of procreation to the fit—i. By the regulation and restriction of marriage to the fit either by education or legislation. ii. By the prevention of procreation by the unfit—whether by segregation of the unfit, or sterilization of degenerates, or the evolution of a healthy public opinion. b. Regulation of the life of the pregnant woman—i. By State provision of food for the necessitous. ii. By provision of hospitals for the reception of women during pregnancy. iii. By State prohibition of woman's work and employment during pregnancy. c. Immediate registration of (a) still births, (b) premature labors, (c) abortions, and (c) if practicable, pregnancy. d. Registration of birth within twenty-four hours. e. Regulation of the life of the woman who has given birth to a child—i. By State provision of food to the necessitous. ii. By State prohibition of woman's work for at least six months after confinement.—Charlotte Med. Journ., Oct., '07.

Infant Mortality and Goat's Milk.—W. WRIGHT (The Lancet) calls attention to the fact that in the countries where goat's milk is largely used as an infant food, infant mortality is low. In Italy the infant often nurses directly from the animal. In Norway the milk is placed in a bowl and the child fed therefrom. If the goat is carefully fed there is no odor to the milk. Goat's milk has more albumin and casein than human milk, but less than cow's milk. The milk of the goat, therefore, more closely approximates human milk than does that of a cow, and for that reason the curd is less heavy, more flocculent and more easily digested. The goat is essentially a clean animal. Its feces are practically solid and rolled in balls, and there is no possibility of their adhering to the hind quarters. Hence these parts, as also the udders, are always clean. Much of the gross contamination of milk is consequently avoided at the source of supply. Goats are practically immune to tuberculosis, and with but few exceptions the only instances in which they have been found suffering from the disease have occurred when they have been housed with tuberculosis cows and have obtained their infection therefrom.

Massage for Haemorrhoids in Infants.—HIPPINS (Journ. de méd. de Paris, Sept. 8, 1907), a Russian physician, has proposed a method of treatment, which rapidly cures hæmorrhoids in infants, and the chronic constipation which causes the hæmorrhoids. He practises massage of the abdomen associated with massage of the rectal varices. With the little finger coated with petrolatum and introduced into the rectum of the infant, he makes gentle circular frictions and strokings directed from below upwards. The séances are given daily, or every two days, and last only a minute, at first; the time being gradually lengthened on succeeding days to three minutes. Each massage of the hæmorrhoids is preceded by massage of the abdomen. After the third or the fourth séance, the pains during defæcation become less, and the venous tumors decrease in volume. The cure of the hæmorrhoids and constipation is secured at the end of two or three weeks of this treatment.—N. Y. Med. Journ., Oct. 12, '07.

Pneumococcus-Peritonitis in Children.—Koos (Arch. f. Kinderheilk., Vol. No. 46, page No. 228).—Two forms of pneumococcus-peritonitis are recognized in childhood, an encapsulated and a generalized purulent peritonitis. The disease always has an acute onset with severe abdominal pain, high fever and vomiting. The pain is usually diffuse. In some cases an additional symptom consists of numerous watery, odorless stools. Herpes-labialis is found in some cases. In the course of the encapsulated form, the acute symptoms ordinarily begin to disappear after 3 to 7 days. In the second stage it is then possible to determine the presence of fluid in the abdomen. A differential point between this form of peritonitis and the tubercular form, is that fluid can be made out very much earlier in the pneumococcus form. Spontaneous rupture occurs in many of these cases, particularly in the encapsulated form, the pus escaping in most cases through the umbilicus, though it may escape through the vagina. If there is no spontaneous rupture and no operative interference there follows, from the retention of the pus, the picture of a severe septic infection. The differential diagnosis between the generalized form and appendicitis is often not to be made. With reference to the etiology, it is to be noted that the infection may be secondary or primary. Secondary infection occurs as a result of primary pneumococcus infection of the lungs, bronchial tubes, pleura, middle ear, testis, etc. Primary infection probably always occurs through the medium of the intestinal tract, though it is possible that in female children, infection may also occur through the genitalia. Indeed, it is noteworthy that of 72 reported cases, 58 occurred in girls. The prognosis of the encapsulated form is not bad if the diagnosis be made and early operation be had. Of 69 reported cases, 51 were of the encapsulated variety. Of these, 4 died, a mortality of only 8 per cent. Of 18 cases of the diffuse form, 14 died, a mortality of 77 per cent. Treatment in both cases is purely surgical, consisting in the evacuation of the pus and drainage, though it is noteworthy that if the operation can be postponed until the second week, the outlook for recovery appears to be much better. The indication for the operation is therefore to be made dependent upon the presence of the fluid exudate.—Interstate Medical Journal.

Two Cases of Meningitis Cured by Lumbar Puncture.—Juarros (El Siglo Médico, July 27, 1907) records the two following cases: A boy, aged eight years, had been ill with fever for some days, after complaining of severe pain in the right ear. He was restless, the pupils contracted and not reacting readily to light, Kernig's sign not well marked, irregular respiration, paresis of the left side of face and left arm, frequent vomiting and obstinate constipation. Some days later by lumbar puncture 25 cc. of purulent liquid were removed. The temperature fell and the symptoms improved. Three more punctures were made, removing 30 cc., 40 cc., and finally 31 cc. of a clear fluid; eight days later the child was perfectly well. Nothing abnormal was found in the ear; the diagnosis made was suppurative ventricular meningitis. The next case was a boy, aged eight years, whose three brothers had died of tuberculous meningitis. There was a contracture of right foot due to cured tuberculous arthritis. He was taken ill with fever, became apathetic, slept little and complained of much headache. There were vomiting and constipation, the reflexes normal, strabismus, pupils irregular and tardy in action. A diagnosis of tuberculous meningitis was made; 40 c.c. of clear liquid were withdrawn on the sixth day after onset of lumbar puncture. Great improvement; the apathy, however, remained, and two days later another 40 c.c. were removed. Five days later the child was completely well.—British Journ. Child. Diseases, Oct, '07

Dissociated Subcutaneous Fat Necrosis Occurring in an Infant Without Other Lesions.—Marshall Fabyan (Bull. Johns Hopkins Hosp., Sept., 1907). According to Opie, fat necrosis is in all cases due to pancreatic disease, while its conception primarily is that of a disease-entity. Certainly cases have been reported where the pancreas was entirely normal. Chiari has compared the condition to a retrograde metamorphosis in which a degenerative process in a tissue is followed by a necrosis. It is true that in all cases the fat-splitting ferment plays a decisive part, as shown, for instance, by Flexner. On the other hand, fat necrosis occurs without lesions of the pancreas in the fat tissues surrounding the organ, and also in localities very distant from it, for instance, the skin. The first case of a subcutaneous fat necrosis was published by Hansemann (normal pancreas); later disseminated fat necrosis with normal pancreas was observed by Fraenkel and Flexner. Fabyan adds a very interesting observation of disseminated subcutaneous necrosis in an infant 14 days old. On the third day of life, numerous lesions, called abscesses, were seen on both cheeks, forearms, back of head, buttock and right lower leg. Most of them faded away and were absorbed. Only the abscess of the right cheek remained; it was punctured by the attending physician. Some "pus" was removed that in cultures was found to be sterile. On the 14th day the child died by accident from asphyxiation. The autopsy revealed normal conditions except a few eccymoses on pericardium and pleura and a large ball of inspissated casein in the stomach. The lesions of the skin were situated on right cheek (large), on right arm and leg. All represented typical foci of fat-necrosis. The pancreas was perfectly normal and the surrounding fat tissue did not show any anomaly. On account of the neighborhood of the cheek lesion to the parotid, the author thinks of the possibility that the gland in infancy might be a producer of lipolysin. The similarity of structure between it and that of the pancreas suggests this possibility to him.—Insterstate Medical Journal.

Jaundice in the New-Born.—GILLESPIE (Cincinnati Lancet-Clinic) says that jaundice of the new-born is so common that it can hardly be called a disease, but occasionally the child is ill and requires treatment. You will look in vain for much assistance in works on diseases of children, and works on obstetrics are silent so far as practical suggestions are concerned. The obstetrician seems to assume that new-born babes require no treatment, the writer on pediatrics is usually one who does no obstetrics, and his experience is almost wholly with older children. He arrives at his opinions of the new-born by reasoning backward from children three or four months old. The result is a particularly dangerous form of error, that error which comes cloaked in the mantle of authority. There is another error of serious moment, the assumption that the child does not require drugs in its treatment.

If a large, full-blooded child is allowed to take all the blood in the after-birth before the cord is clamped or tied, you will have jaundice within two or three days, because more blood is present than it can use and a state of plethora is accompanied by a rapid destruction of blood cells. A feeble child should be allowed to take all the blood it can, in order to bridge it over until the milk supply is established, but the vigorous child is better off without it. This statement is based upon fifteen years of careful observation, and can be verified by any one who will take the trouble. If there is considerable extravasated blood, as in hemato-cephalocele, its absorption may give an icteric hue. In these conditions no treatment is required.

If the urine is not loaded with bile salts, the stools do not show absence of bile, and no infection has occurred at the navel, the jaundice may be ignored.

If bile salts are present in the urine and absent in the stools, calomel and phosphate of soda are just as positively indicated as in older children and adults, and even more effective, unless some congenital defect in the biliary apparatus is present. A teaspoonful of a saturated solution of sodium phosphate may be given the new-born child, every two or three hours before nursing, with very good effect, and may be continued as long as required.

If intestinal fermentation is present, salol, guaiacol, bismuth and other drugs of their class should be used as unhesitatingly as in older children.—Hot Springs Med. Journ., Oct., 1907.

Diphtheritic Endocarditis with Terminal Cerebro-Spinal Meningitis.—J. T. C. Nash, M.D., D.P.H. (Lancet, Sept. 21, p. 826). A male child, aged between three and four, was attended medically for headache, loss of appetite, furred tongue, constipation, and a fugitive erythematous rash. The provisional diagnosis was "gastric disturbance." Later symptoms—occasional delirium, restlessness, and tenderness along the back, drowsiness, headache, and fever—suggested malignant endocarditis, but there was no murmur. The child died suddenly at the end of a week. Slight jaundice was observed two days before death; retraction of the head and strabismus about 36 hours before death; and a petechial rash and slight opisthotonos on the last day.

The case was reported to the writer, and he attended the necropsy. There was a copious petechial eruption. There was no obvious discharge from the nose or ears, and the practitioner who had been in attendance was unaware of any. There was no obvious enlargement of the glands. A few petechiæ and some slight hyperæmia were observed in connection with the cerebral meninges and a few of the posterior convolutions were slightly adherent. Prior to opening the skull the writer removed under aseptic condition by lumbar puncture two c.c. of cerebro-spinal fluid which was observed to be blood-stained and slightly turbid. He inoculated with this fluid two sterile blood agar tubes and two ordinary broth tubes. The omentum had a dirty, degenerated appearance. The intestines were empty and their walls were dotted with numerous petechiæ. The spleen was slightly enlarged, very dark, and congested and firm. The heart showed some signs of fatty degeneration and a few petechiæ. Some vegetations were found on the free edges of the aortic cusps. The mitral valves were thickly coated with similar deposits. Another blood-agar tube was inoculated from these vegetations. Each kidney was extremely hæmorrhagic on the surface. The appearances plainly indicated a septicæmic or embolic condition, the cardiac lesions being characteristic of malignant endocarditis.

Where was the primary infecting focus? And what was its nature? There being nothing obvious the writer felt certain that there must have been some sore throat or aural antecedent which had not been deemed of any consequence. On cross-examining the parents he ascertained that the child had had earache and discharge from the ear about three weeks previously. The discharge apparently ceased before the medical attendant was called in and had been so little thought of that it was not mentioned. The parents were certain that the child had never complained of sore throat. A copious growth of a pure culture of Klebs-Löffler diphtheria bacillus was obtained from the cerebro-spinal fluid and almost a pure culture from the heart swab.

The case was reported to the writer after death because of the resemblance to cerebro-spinal fever of the later symptoms—retracted head, the strabismus, headache, photophobia, raised temperature, and petechial rash. Bacteriological investigation showed that the diphtheria bacillus had invaded the central nervous system and embolic plugs laden with diphtheria bacilli would be sufficient to account for these symptoms. At the necropsy no evidence of any diphtheritic membrane was found. The attending practitioner had examined the throat with no result during life. Death might easily have been certified without post-mortem examination as due to cerebro-spinal meningitis. Even after this it was certified as due to malignant endocarditis, but the subsequent bacteriological investigation seems to indicate that it was due to diphtheritic septicæmia. The case once again suggests that isolated cases of death preceded by symptoms of cerebro-spinal meningitis should not be attributed to epidemic cerebro-spinal fever without bacteriological proof. To justify the diagnosis of epidemic cerebro-spinal fever it appears to be necessary that the diplococcus intracellularis of Weichselbaum should be found. As the necropsy was performed in a small room full examination of the middle and external ear and of the naso-pharynx was impossible.

The finding of the diphtheria bacillus in the cerebro-spinal fluid suggests an explanation of the fact that diphtheria antitoxin has been found useful in some cases of cerebro-spinal meningitis, though it may have beneficial results irrespective of the diphtheria bacillus.

The history appears to have been as follows. The child first suffered from a mild form of diphtheria which was untreated. The bacilli found their way via the Eustachian tube to the middle ear, producing otitis media. Thence by way of the blood or lymph bacilli were carried to the heart, setting up endocarditis and producing vegetations, some of which, by embolism, were carried to the various organs affected, including the brain and spinal cord. Such distribution of the diphtheria bacillus is rare. Indeed, malignant endocarditis is an extremely rare complication of any of the usual fevers.

Cerebro-spinal symptoms in association with malignant endocarditis have been observed of course, but the diphtheria bacillus does not appear to have been previously demonstrated as the infecting organism.—The Med. Review, Nov., '07.

Undescended Testicle.—Barr (American Journal of Surgery, January, 1907) holds that undescended testicle is at all times a surgical condition which should invariably be operated on before puberty, preferably between the ages of ten and twelve years. Even after puberty operation is still indicated, unless the testicle is within the abdominal cavity, and there is entire absence of hernia. He notes that the spontaneous descent of the undescended testicle is uncommon after the first year of life, and that in double cryptorchis, unless the condition be relieved, sterility is certain. It is often associated with impaired virility. Moreover, he calls attention to the fact that undescended testicle is liable to accident and disease, and is frequently complicated by hernia which cannot be supported by a truss. He believes that by operation before puberty there is more than a reasonable hope that the testis will develop along normal lines. If it cannot be brought down into the scrotum it should be replaced extraperitoneally within the abdomen.

Barr indorses Bevan's method of complete separation of the processus vaginalis from the cord, and its division, together with separation of the posterior and parietal peritoneum from the spermatic vessels as they pass upward from the internal ring, with a further tearing across of all fascial bands in the cords.—Therapeutic Gazette, Nov., 1907.

Successful Artificial Feeding of Infants.—Moro (Münchener med. Woch., Nov. 5, 1907) announces that very young guinea-pigs and rabbits invariably died in his experiments when fed with milk from another species. They presented symptoms closely resembling those of infantile atrophy and cholera infantum. It was found, however, that if the animals were given vegetables the symptoms were warded off. The surprisingly favorable effect of the vegetable diet on the animals induced him to try a pod vegetable soup for infants with acute alimentary disturbances like those observed in the animals, and the results were equally good. It was found that 80 per cent. of the animals soon died when they were never allowed to suckle, while only 30 per cent. died of those allowed to suckle one day, and only 10 per cent. of those allowed to suckle three days. From these and other facts related, Moro emphasizes the vital importance of breast milk during the first weeks of an infant's life. Once past these first weeks, the difficulties of artificial feeding grow rapidly less. Even a single week of breast milk may tide the infant past the danger point, after which artificial feeding can be successfully inaugurated.—Jour. A. M. A., Dec. 14, 1907.

The Eustachian Tubes in Infants and Young Children.—Philip D. Kerrison, M.D. (The Laryngoscope, Vol. 17, p. 661).

The author calls attention to the anatomical differences between the eustachian tubes of infants and young children and those of adults, in explanation of the greater tendency toward otitis media in young children.

The tube in infants is shorter (14 or 15 mm.) than in adults (33 to 38 mm.), and since the diameter is quite as great as in adults, it is considerably greater in proportion to its length.

Moreover, the tube in infants is nearly horizontal, whereas in adults the pharyngeal orifice is 12 or 14 mm. lower than the tympanic. Also the pharyngeal orifice in infants is below the level of the hard palate (in adults it is above), and there is no angle at the point of junction between the bony and membranous portions of the tube.

Thus it is seen that the tube in infants offers a much more open entrance for bacteria from the naso pharynx to the tympanum, and a child suffering with rhinitis and adenoids is likely to have a middle ear infection.

The author is of the opinion that when a pharyngeal growth is clearly a factor in acute tympanic disease the removal of the growth and the incision of the drum membrane should be done at the same time.—St. Paul Med. Journal, Dec., 1907.

Vaccines and Bacterial Infections.—Western (Lancet, Nov. 23, 1907) summarizes as follows the results obtained by him in treating cases of bacterial infection with vaccines according to Wright's method. In cases of lupus, both of the dry and ulcerated varieties, though particularly of the latter, treatment by inoculation has proved a very valuable adjunct to such other measures as procure a local hyperæmia. Out of thirty cases of enlarged tuberculous glands only four failed to show improvement, while sixteen were completely cured, eight of which when first seen were discharging from contaminated sinuses. In the case of chronic tuberculous arthritis and in such topographically diverse affections as erythema induratum and tuberculous epididymitis, the results have been almost universally satisfactory: in affections of a nontuberculous origin, those such as acne, generalized furunculosis, and obstinate carbuncle, which have been treated with their appropriate vaccines, have cleared up with remarkable rapidity. The narrower experiences of pneumococcal and bacillus coli infections are sufficiently significant to foreshadow the far wider fields that seem to be opening before a line of treatment that bids fair, at no distant period, to rank among the most potent weapons of future therapeutics.—N. Y. Med. Jour., Dec. 14, 1907.

Chlorosis in Infants.—According to LEENHARDT (Zentralb. f. Inn. Med., No. 30, 1907) chlorosis occurs in the earliest years of life. He has observed sixteen cases in children between the ages of twelve and eighteen months, the resemblance to the form of anæmia met with at puberty being often quite obvious. The patients are very pale, but normally developed and generally in a good state of nutrition. With the exception of cardiac murmurs and murmurs in the vessels of the neck nothing abnormal can be detected. The liver, spleen, and lymphatic glands are of normal size. Usually there is constipation. The red and white blood-corpuscles are normal in number, both relatively and absolutely, but the hæmoglobin is greatly deficient. The resemblance to chlorosis of later life is heightened by the fact that a rapid improvement takes place under treatment with iron.—Brit. Journ. Child. Dis., Oct., '07.

Treatment of Itch.—At the Hospital Saint-Louis, Paris, the following method of dealing with scabies is employed (La Clinique, September 27, 1907): The treatment consists of two parts: 1. Cleaning and softening of the skin by means of friction with black soap for ten minutes, followed by a warm bath for thirty minutes. (2) Rub, for twenty minutes, the skin over the whole body with the following pomade (Helmerich):

FORMULA FOR SUMMER.

℞	Sublimed sulphur	10.0 grammes;
	Potassium carbonate, pure	4.0 grammes;
	Lard,	32.0 grammes;
	Distilled water	4.0 grammes.

M.

FORMULA FOR WINTER.

℞	Sublimated sulphur	10.0 grammes;
	Potassium carbonate, pure	4.0 grammes;
	Lard	31.0 grammes;
	White wax	1.0 gramme;
	Distilled water	4.0 grammes.

M.

This pomade should remain on the skin for twenty-four or forty-eight hours. The rubbing being finished, the patient puts on his clothing, which has been baked in the oven while he was in the bath. On the following day he returns to take a bath of starch. The irritations do not cease immediately; they are kept up by lesions made by the friction and cause considerable itching of the skin. No more baths are given for fear of increasing the epidermic lesions. This inunction treatment will destroy all of the adult acarianæ. At the most, some of the eggs will remain in the cunuliculi, and there will hatch out, at the end of three weeks, which is the period of incubation of these parasites. Some cases with infected lesions, also infants and elderly persons, do not bear the Helmerich ointment very well, and it can be replaced, as follows:

℞	Lard	50.0 grammes;
	Sulphur	30.0 grammes;
	Balsam of Peru	15.0 grammes.

M.

Or, another:

℞	Lard	90.0 grammes;
	Beta naphthol (dissolved in alcohol)	10.0 grammes.

M.

It is generally necessary to return to the friction, three or four times, at intervals of a month. After being treated, patients should take five or six starch baths. The postscabious dermatitis, with lesions consecutive to the treatment, which may become irritated and infected, are readily cured by applications of lard, petrolatum, or what is better, the following:

℞	Glycerite of starch	150.0 grammes;
	Bismuth subnitrate	10.0 grammes.

M. —N. Y. Med. Journ., Nov. 9, 1907.

Fluoroform in Whooping Cough.—In a communication to the Sociéte de thérapeutique, TISSIER reported (Bulletin général de thérapeutique, November 8, 1907) the results of experiments in whooping cough with chloroform, bromoform, iodoform, and especially with fluoroform. The latter (C_2HFl_3) is a tasteless, odorless, and colorless gas, which remains a liquid below +15 deg. C, so that in practice it is necessary to employ a saturated, watery solution which contains 2.81 per cent. of fluoroform. For nursing infants the dose is one drop after each paroxysm for the first day, then two or three after each coughing spell until these diminish. It should not be continued beyond one hundred drops. For children of 2 to 5 years of age, from 5 to 10 grammes may be given daily. In adults the dose is 30 grammes (or one ounce) daily, in teaspoonful doses. Under the effects of this treatment the paroxysms are said to diminish very rapidly. At the end of one week, it is exceptional to find more than ten during the day. On account of its effects he regards it as a specific. Out of 117 cases reported by Tissier, all were cured by this treatment, no matter what was the age of the patient. In none did any bronchopulmonary complications appear.—N. Y. Med. Jour., Dec. 14, 1907.

Epidemic Acute Poliomyelitis in Norway.—F. Harbitz and O. Scheel (Journal of the American Medical Association, October 26, 1907) give an account of an epidemic of acute poliomyelitis occurring in Norway in the years 1903-6, with special reference to the nature and pathology of the disorder. In 1905-6 a total of 1,053 cases was reported, with 145 deaths, or 13.8 per cent. Both adults and children were affected, the latter chiefly. The mortality was high in some districts, very slight in others. While most of the cases were followed by the usual paralysis, some were very mild and otherwise atypical, but the morbid process was probably the same. There was some evidence pointing to contagion in some cases, and the disease seemed to leave a certain immunity. The authors have had opportunity to examine necropsy material from nineteen cases. Aside from the central nervous system, the findings were in all essentials negative. As regards the nervous system, they summarize their conclusions as follows: "In a severe or fatal case of acute poliomyelitis we, as a rule, have before us a diffuse inflammation of the entire cord with its pia mater, of the entire medulla oblongata and pons, of the basal ganglia and often also of the cortex of the brain to a greater or less extent, always in connection with a similar inflammation in the pia mater." They examined also four milder cases in which the patients had died of complications during the stage of repair; and in these cases by the use of special methods they were able to demonstrate the existence of degenerated conditions in the central nervous system greater than they had expected to find. The common character of the pathological process in cases clinically resembling Landry's paralysis, bulbar paralysis, and localized myelitis was also made evident in their examinations. As regards multiple neuritis in these cases their findings were negative, only what must be regarded as secondary changes being found in the peripheral nerves. A case of what was clinically meningoencephalitis occurring with this epidemic showed similar pathologcal anatomic conditions. Their investigations furnished no evidence of any relationship between this disease and cerebrospinal meningitis. They consider that there is no question but that acute poliomyelitis is an infectious disease dependent on a specific microorganism. This is true at least of the epidemic cases. The diplococcus described by Giersvold was found in the cerebrospinal fluid in three of their cases, but was lacking in the majority. While they cannot speak definitely as to its specificity, they think it demands further investigation. It is evidently an organism difficult to demonstrate; it seems to die rapidly, and experience shows that microorganisms soon disappear in the nervous system. It is their belief that poliomyelitis is due to the direct action of some germ, and many facts favor the assumption that the atrium of infection is in the digestive tract, the nervous system becoming involved through the lymph stream along vessels and nerve trunks or through the blood. —Medical Record, Nov., '07.

Rickets and Syphilis.—MARFAN (Semaine Médicale, Paris, Oct. 2, XXVII, No. 40, pp. 469-480) warns that a syphilitic origin for rachitis is more than probable when this condition develops during the first three or four months of life, and affects the skull predominantly, with anemia and enlargement of the spleen. Syphilis, he asserts, will be found in the antecedents in two out of every three cases of this kind. Rachitis of alimentary origin does not appear until after the sixth month; it affects the legs more than the skull; anemia is less pronounced, and the spleen is seldom enlarged while digestive disturbances and big belly are frequently encountered.—J. A. M. A., Nov. 2, '07.

Diphtheria Antitoxin as a Prophylactic.—PETERS (British Med. Journ., Oct. 5, '07) says that though it can not be denied that a certain prophylactic value has been established there has possibly been a tendency to go to the extreme in estimating the benefits and in pushing the application of this remedy. He gives in detail the contrast presented by the methods used in two outbreaks of diphtheria at Nottingham during 1906. The first outbreak was at the General Hospital. To each of 136 individuals exposed to infection were given 500 units of unconcentrated serum, the subjects being then examined bacteriologically and their throats swabbed. Out of the 136, 21 harbored the bacilli and were all promptly isolated. In spite of the antitoxin 7 developed the disease. The second outbreak occurred among school children; the throats of 2,000 children were examined and 600 of them were swabbed; 20 carriers were found, who were isolated, but no prophylactic serum was given in any of the 2,000 cases. Yet only 4 new cases developed. Peters says that had serum injection been administered to the entire 2,000 children in and around Dunkirk at the time the swabbing was carried out, one can readily imagine how easily the sudden cessation of the epidemic might have been attributed to it. The procedures of real importance in dealing with an outbreak of diphtheria are: 1, Bacteriologic examination of throats; 2, isolation of carriers of infection under proper medical supervision. Where these can be properly carried out there is really no necessity for prophylactic injection of antitoxin, for, with proper medical supervision, the antitoxin is itself such an efficient remedy that there is practically no danger for the patient, if the remedy is administered when the disease declares itself.—J. A. M. A., Nov. 2, '07.

A Case of Parrot's Pseudo-Paralysis.—Moncorvo Filho (Brazil Medico, July 22, 1907) reports a well-marked case of this rare affection. A baby, aged 23 days, was brought to him with a history of having some paralysis of right arm ten days after birth which soon extended to the whole limb; a few days later the left arm was affected and there was some difficulty in moving the left leg. On the slightest movement there was evidence of extreme pain. The child was well nourished. The father confessed to syphilis three years before marriage, and the mother had had two miscarriages. The absence of movement was manifest; there was, however, limited movement in the fingers. There was no muscular atrophy and the electrical reaction was normal. There was epiphysial dislocation of the articulations; at the left elbow marked crepitation like a fracture. There was an enlargement of all the articulations. Mercurial inunction removed the most urgent symptoms in ten days. Movement was restored, the articular swelling had subsided, and the child had no suffering. The writer's father had recorded nine cases of this disease in Brazil, where it seems less uncommon that elsewhere. He believes the prognosis is more favorable than was maintained by Parrot, who stated, "Presque toujours la terminaison est fatale."—Brit. Journ. Child. Diseases, Oct., '07.

Diphtheria Diagnosis.—Dr. B. R. Rickards (Am. Pub. Health Assoc. Meeting, Oct., 1907), of Boston, referred to some of the factors which enter into the bacteriological diagnosis of diphtheria. The question of types on which a positive report should be given was discussed from both the standpoint of diagnosis and release, the question being raised that in some cases greater leeway should not be allowed in release cultures owing to the clinical evidence of the organism. The personal element still entered into diagnosis to a certain extent, but could and should be reduced as much as possible. It was better for the diagnostician to have no knowlege of the clinical data of a case until the bacteriological diagnosis was made, owing to the mental bias which might otherwise be produced. In testing diphtheria organisms for virulence, varying results in the virulence of organisms isolated from the same culture had been noted and further work along this line was very necessary. The writer believed that there should be greater uniformity in the various laboratories as to what forms should be considered as positive for diagnosis and release, and he emphasized the necessity of further experimental work on most of the points regarding the value of coordinating diphtheria diagnosis and diagnostic procedures in general, in order that it might be placed on a standard basis.—N. Y. Med. Record, Nov. 2, 1907.

Constipation in Infancy and Childhood.—The Clinical Journal of June 19, 1907, has in it an article by CAUTLEY in which he gives the following advice:

First of all relieve the retention of feces, and secondly try and cure the habit. Treatment must be steady and persistent. In the simplest cases, in breast-fed infants, all that is necessary is attention to the diet and habits of life of the mother. The breast feeding must be properly regulated. The quantity of milk can be increased by a liberal supply of fluid, tonics, etc. The percentage of fat in the mother's milk can be increased by giving a liberal diet with an excess of proteid, by a moderate allowance of alcohol, and by prolonging the intervals between each feeding. Liberal diet must be combined with plenty of exercise, otherwise the percentage of proteid in the milk is also increased. Sometimes the administration of a teaspoonful of cream in warm water twice a day, before feeding, is a sufficient remedy. For a bottle-fed infant a suitable milk mixture, containing a high proportion of fat and sugar, must be given. Water should be given freely between meals, and after a few months of age malted food or oatmeal may be added.

The habit of evacuation at the same hour daily must be taught to infants. At first it may be necessary to stimulate the action of the bowels by the introduction of the oiled tip of the finger, the nozzle of a syringe, or a soap suppository into the rectum. If these simple measures are insufficient, the following drugs may be used: manna, added once or twice a day to the bottle; sodium phosphate or citrate, gr. v. to x., or sulphur gr. j., added to each bottle, or fluid magnesia. If the stools are chalky and white, one or two minims of the tincture of podophyllin may be given two or three times a day. Peristalsis can be encouraged by abdominal massage along the colon, in a circle round the umbilicus, for five or ten minutes three times a day. The skin should be rubbed with oil to prevent excoriation. During the first year the palm of a warm hand should be used. After that age the finger-tips may be applied along the course of the large intestine, from the cecum to the sigmoid flexure, and no oil need be used. Soap suppositories are comparatively harmless, and consist of one grain of soap to five minims of oil of theobroma. They should be well oiled before insertion, and used night and morning. Small glycerin suppositories, gluten suppositories, or a simple cone of oiled paper are of similar value. If immediate relief is needed, from one-half to one drachm of glycerin in half an ounce of water should be injected into the rectum; it acts quickly and efficiently. Enemata of one-half to one ounce of cold water, soap and water, salt solution, or olive oil are useful. After the age of two years, medicated suppositories, consisting of 1-24 to 1-12 of a grain each of aloin, extract of belladonna, and extract of nux vomica, may be used night and morning. The continued use of suppositories or injections, whether of soap or glycerin, is not advisable, for it may set up catarrh of the rectum.

Internal medication is often necessary, but should only be used for chronic and severe cases. Manna, aloes, and sulphate of soda may be given until two liquid stools are passed daily. This mixture should be given for two or three weeks and reduced slowly. At six months of age three to five minims of tincture of aloes, or the tincture of aloes and myrrh, may be given three or four times a day, combined with one minim of tincture of belladonna and fifteen minims of syrup of ginger. Tincture of nux vomica should be added if peristalsis is defective. To this mixture may be added ten grains of sodium sulphate or phosphate, or some syrup of senna. The syrup of senna, rhubarb, and figs are also useful. Drastic purges should be avoided. The usual dose of castor oil merely empties the bowel temporarily and is followed by recurrence of the constipation. For hard fecal masses an injection of warm olive oil, from one drachm to half an ounce, should be given, and followed in six hours by an enema of one to six ounces of soap and water, or salt solution. Older infants, say at two years, may have an injection of turpentine oil one drachm, olive oil two drachms, and the yolk of one egg, well mixed and added, with constant stirring, to four ounces of warm water. Injections must be given gently and slowly, and stopped at once if pain is produced. Mechanical aids, such as a bent hairpin, a scoop, or a teaspoon, must only be used by a medical man.—Therapeutic Gazette, Nov., 1907.

The Psychic Function in Infant Feeding.—During the progress of a mother nursing her infant there is something more than the mere conveyance of food from mother to child. An influence is yielded which favors a more perfect utilization of the nourishment and a more perfect function is obtained. Of all foods for the infant mother's milk ranks first and all imitators have failed to furnish a preparation equal to it. Necessity may demand the use of artificial food but the "just as good," in this instance as in all others, fails to reach the standard; however, the question of infant feeding is one that needs to be studied carefully in order that we may provide a means of sustenance for the infant when the mother is so unfortunate as to be unable to provide her offspring with the character of food which rightfully belongs to it. A woman who is competent to nurse a child but will not do so, deprives herself of the holiness of affection and robs her child of its birthright. It is difficult to perceive how such a woman possesses true affection when in this respect she is an unnatural mother. One of the authors of a symposium upon infant feeding which appears in the Medical Standard for November, 1907, touches upon the spiritual element of the problem, as the editor says, in a way which baffles chemistry and microscopy because it is not of the milk at all and cannot be measured with scales or isolated by a lens.

This contributor beautifully says in regard to this aspect of the subject: "While the mother is nursing her babe, she imparts to it more than food—a solace with the loving lullaby song, that no one else and nothing else can supply, a needed food to the nervous system. In return, there is greater vitality."

The Standard comments as follows:

Never was a truer or more fitting tribute paid by medicine to motherhood—by science to the unknowable. This man's long years of experience and practice have taught him more than medicine. Behold, a greater than Solomon is here. It is not even enough to recognize the purely physiologic influence of the mother's psychic function upon the digestive functions of the child. That view of the matter, important as it is and all too frequently overlooked, is not adequate enough. It does not by any means compass the probabilities—nay, the almost certainties—of the case.

The tender pressure of the tiny body against the mother's responsive bosom; the electric contact of the little moist lips against the turgid breast; the magnetic influence of the crooning, rocking mother-presence; more potent, because purer, than even the sexual contact of man and woman, and because exercised upon a far more plastic organism; these are more than mere pretty poetic imaginaries—they are, as our contributor suggests, the most profound and powerful phenomena of nature, no less truly scientific because they elude our instruments of precision.

Strangulated Inguinal Hernia in Infants.—(International Journal of Surgery.) The author discusses the subject of inguinal hernia in infants and concludes that as a rule it is best to advise the wearing of a truss for several years of infancy and early childhood with the hope of getting a cure without an operation, only resorting to operation in case of strangulation or of failure to effect cure by the use of a truss.

When strangulation does occur, operative relief is even more imperative than in the case of an adult, as the powers of endurance are less. The pathology and symptomatology, diagnosis, prognosis and treatment of strangulated hernia is considered.

The author does not believe in wasting much time in taxis. He gives indication for reduction and resection of intestine.

The author objects to transplantation of the cord by reason of its predisposition to epididymitis. He advises the use of buried sutures of 30-day chronic catgut. The skin edges are brought together by a subcutaneous suture of celluloid linen thread.

The author reports a case of strangulated hernia in a three-months'-old male baby. Reduction was attempted under chloroform anæsthesia before patient was brought to the hospital. The operation was performed under local anæsthesia induced by a 2 per cent. solution of eucaine; a collodion dressing was used. The author summarizes as follows:

"I would note the infrequent but occasional occurrence of strangulated hernia in infants. The ease of a reasonable certainty in the diagnosis of this condition. The dangers of taxis by reason of the fragility of the structures involved. The dangers of operation in infants have, perhaps, been overestimated. By proper precaution and care the risks of post-operative infection can be largely eliminated. The shock incident to anæsthesia and prolonged manipulation can be avoided by the use of a sterile and practically non-toxic local anæsthesia and by rapid and careful work."—Maryland Med. Jour., Dec., 1907.

Enteritis and Appendicitis in Childhood.—COMBY (Arch. de Méd. des Enf., April, 1907) comes to the conclusion that there is a direct causal relationship between enteritis and appendicitis in childhood, muco-membranous entero-colitis being the form that most often causes appendicular lesions. The connection between the two is rendered probable by the facts that the appendix is not so much an adjunct as a prolongation of the colon and that the structure of both is identical. In muco-membranous enteritis the inflammation attacks the lymphoid tissue of the large bowel, so that involvement of the lymphoid tissue of the appendix can easily occur. Appendicitis in children is most often a chronic disease and heals spontaneously in the majority of cases. It is frequently a sequela of infectious processes in the alimentary canal, and like entero-colitis is often preceded by attacks of naso-pharyngitis and by adenoids. These conditions, therefore, may mark an early stage of intestinal and appendicular infection. As prophylactic of appendicitis, the dietary of children should be carefully regulated so as to avoid enteritis, but if the latter does occur it should be carefully treated. Naso-pharyngitis and adenoids also should receive attention, inasmuch as lesions of the alimentary tract and appendix frequently follow. —Brit. Journ. Child. Diseases, Oct., '07.

Fractures of the Elbow in Children.—RUFUS B. SCARLET, M.D. (The Monthly Cyclopædia of Practical Medicine, Nov., 1907), says that these fractures are numerous in children, that the examination is often very unsatisfactory, and that when there is the slightest doubt an anæsthetic should be given, when a diagnosis can be made, the fracture reduced, and the proper dressings applied. If there be further doubt, the X-ray will clear it up.

The writer makes the following classification: "Fractures above the condyles, fractures between the condyles, fractures of either condyle, fracture of either epicondyle, separation of the epiphysis, fractures of the head and neck of the radius, and fractures of the olecranon process."

"In all fractures of the elbow, whatever position the arm is placed in, it should be inspected frequently, the radial pulse noted, and the swelling carefully observed. All apparatus should be removed at least once a week, and while passive motion should not be instituted until late, massage may be started after the primary swelling has subsided."

A. JACKSON.

Malignant Endocarditis in Children.—DR. WM. P. NORTHRUP (Meeting of N. Y. Academy of Medicine, Nov. 21, 1907) presented this communication. He said he had been asked to report regarding the frequency of malignant endocarditis in children. It had been his privilege to serve as pathologist to the Foundling Hospital for twelve years; this hospital had an annual death rate of 300 or 400, and during that time he had encountered but one case. Dr. J. Lewis Smith saw a mysterious case which was brought to the hospital with the history that the patient had been very sick, but with manifestations that could not be determined. At autopsy the house physician carelessly threw the parts into a bottle of Müller's fluid, but fortunately the heart was in good condition for examination and he found it to be the seat of an ulcerative malignant endocarditis. The conditions of the other viscera could not be determined. The heart lesion was typical, with the little nipple hanging from the mitral valve. This was the only case at the Foundling Hospital, and it occurred during his first two years' service there as pathologist; during the following ten years he knew of no case, although he had been constantly on the lookout for one. Dr. Northrup said he had searched the literature for other cases and he had also looked over the records of the Presbyterian Hospital. There he had found records of three cases more or less incomplete. In some blood cultures were obtained with growth, but there had been no autopsy; in others there had been no autopsy and no growth, but the characteristics of the disease were almost typical. These three casese were not worth while dwelling upon. Dr. Northrup wished to emphasize the scarcity of cases of malignant endocarditis in children; they were very rare. In all the cases examined, with one exception, he had failed to find a valvular lesion. The ages of the patients at the Presbyterian Hospital were 9, 11, and 12 years, respectively; those at the Foundling Hospital were four years and under. It might be safely stated that malignant endocarditis was rare under four years of age.—Medical Record, Dec. 7, 1907.

Post-Scarlatinal Affections, Theory of.—B. Schick (Jahrbuch f. Kinderheilkunde, Supplement, 1907). A number of cases are reported by the writer to show that post-scarlatinal nephritis and lymphadenitis never develop before the twelfth day and may not appear until the sixth week, the average being in the third and fourth weeks of the disease. They usually come on together, although the adenitis may appear alone. He has also observed a number of cases in which there was a period of remittent fever of sudden onset and of undiscoverable cause, at corresponding periods: also endocarditis, rheumatic affections, and relapses of the scarlet fever or scarlatinal sore throat—all occurring at about the same interval after the first symptoms of the disease, almost always in the third or fourth week. The writer believes that the primary agent of the scarlet fever is checked in its proliferation in the course of the self-limited disease, but that, after a time, the organism becomes less resistant or ultra-susceptible, so that the primary agent still lurking in the tissues is able to commence to proliferate anew, causing a new series of symptoms of infectious or toxic nature, or there may be reinfection from without. By the end of the second week, in scarlet fever, a period of specific predisposition for post-scarlatinal affections sets in, which lasts up to the seventh week. The greatest tendency to the flaring up of the scarlatinal process is displayed in the third and fourth weeks, after which it rapidly subsides. A similar period of ultra-susceptibility has been noticed in typhoid fever and also in serum disease.—Monthly Cyclopædia Pract. Med., Nov., 1907.

BOOK REVIEWS

Diseases of Infancy and Childhood, Their Dietetic, Hygienic and Medical Treatment. A Text-book designed for Practitioners and Students in Medicine. By Louis Fischer, M.D., New York. F. A. Davis Co., Publishers, Phila., 1907.

This work is a decided addition to the literature of Pediatrics. The author has long been recognized as one of the scientific workers in diseases of children. Great stress is laid on Diagnosis, Symptoms and Treatment, while Pathology and Bacteriology are given full value.

The volume is well illustrated with both colored and black and white plates, most of the former being made at the bedside of the patient. It would have been of great service, however, if the chapter on Diseases of the Skin had been illustrated.

The chapter on Infectious Diseases is of great interest, as the author's connection with the Willard Parker Hospital has given him a vast amount of clinical material to draw from. No mention is made of Duke's disease; no doubt Dr. Fischer does not believe it to exist as a separate entity.

Many valuable prescriptions and formulæ are given, together with a table of doses for children.

The work is divided into twelve divisions, as follows:

I. The New-born Infant. II. Abnormalities and Diseases of the Newly-born. III. Feeding in Health and Disease. IV. Disorders Associated with Improper Nutrition and Diseases of the Mouth, Stomach, Intestine and Rectum. V. Diseases of the Heart, Liver, Spleen, Pancreas, Peritoneum and Genito-Urinary Tract. VI. Diseases of the Respiratory Tract. VII. The Infectious Diseases. VIII. Diseases of the Blood, Lymph, Glands or Nodes, and Ductless Glands. IX. Diseases of the Nervous System. X. Diseases of the Eye, Ear, Skin and Abnormal Growths. XI. Diseases of the Spine and Joints. XII. Miscellaneous.

So great has been the demand, that W. B. Saunders Company, the medical publishers of Philadelphia and London, have found it necessary to issue another revised edition of their illustrated catalogue of medical and surgical books. In looking through the copy we have received, we find that since the issuance of the last edition six months ago, the publishers have placed on the market some twenty-five new books and new editions—truly an indication of publishing activity. The colored insert plate from Keen's new Surgery, which enhanced the value of the former edition, has been replaced by a new one from the second volume of the same work, and this alone gives the catalogue a real value. A copy will be sent to any physician upon request.

PEDIATRICS

Vol. XX FEBRUARY, 1908 No. 2

ORIGINAL ARTICLES

THE TREATMENT OF TUBERCULOSIS OF THE LYMPH GLANDS IN CHILDREN.

Francis M. Pottenger, A. M., M. D.,

LOS ANGELES, CALIFORNIA.

That children are born free from tuberculous infection is a generally recognized fact. That a large proportion of children become infected with the tubercle bacillus during the early years of life is also accepted.

The exact method in which the bacilli are taken into the body, whether by inhalation or ingestion or both, and the exact source of the infecting micro-organisms, whether they come in large part through milk or whether wholly from some human being who has previously had tuberculosis and scattered the bacilli about through carelesseness, may be debatable; but we do know that tuberculosis is quite common in childhood and that it is responsible for many deaths at this time of life; and, furthermore, clinical evidence goes to show that infection at this time of life is responsible not only for the deaths which occur during childhood, but for many of the cases of tuberculosis which manifest themselves and many of the deaths occurring from it in later life.

A tuberculous infection may exist in the human body for years without causing active symptoms. Evidence of the truth of this statement is found daily in post-mortems and the clinical history of patients affords abundant confirmation of it.

Tuberculosis, as a disease, can not be understood unless this idea of latency is grasped. Unlike acute infectious diseases which show an infection, a definite period of inoculation and then a fully developed disease, tuberculosis begins as soon as the bacilli gain entrance into the organism, and tubercles are found. We might term this a miniature tuberculosis. There are no recognizable symptoms unless the primary infection be very extensive, yet the disease is engrafted and there is a constant tendency for it to spread to adjacent tissue or to be carried to distant organs. After the area of infection becomes larger or the disease spreads to new parts, then symptoms appear. This may only take a short time, a few weeks or months; on the other hand, it may take years; so it is necessary to recognize the fact that the time between infection and the appearance of the symptoms of tuberculosis is variable, and oftentimes months and even years.

When bacilli gain entrance into the body, they soon find themselves in the lymph spaces where many of them are destroyed before they cause any pathological changes. Others are carried on to the lymphatic glands where doubtless many more are destroyed; but, where under favorable circumstances, some will be able to resist the protective forces of the host and cause an infection. It is possible that the first foci of infection in tuberculosis is nearly always in the lymphatic glands; consequently we are warranted in the assertion that tuberculosis is primarily a disease of the lymphatic system. Although this is the seat of the primary focus, yet conditions here are very unfavorable to the growth of tubercle bacilli, because the lymph is rich in bodies which protect the organisms from infection, consequently, an infection established here may remain localized and never extend beyond this or at most may only extend to the neighboring glands; and these may heal up after a period of time and leave the patient free from infection. On the other hand, infected glands are a constant danger, and more so in childhood than in adult life, because children are more prone to infections which call upon the lymphatic glands for greater activity during which time bacilli may be carried from the glands and scattered in new areas where conditions are more favorable to their growth and where they may be able to establish a more extensive lesion. Doubtless this is the way the lungs become infected in many instances.

The importance of tuberculosis of the glands, then, is self evident. This is a condition which should be recognized and treated in a serious manner.

How often tuberculosis of the glandular system is present in children we are not able to say, but careful study of clinical and pathological records shows it to be a very common condition.

In a former paper (A Study of Tuberculous Infection, New York Medical Journal, March 21, 1903) I presented a great mass of evidence on this subject which shows the importance of it. I will repeat some of the data there presented.

Cornet analyzed the post-mortem records of the Berlin Pathological Institute from 1876-1891, and showed that of 947 children dying during that time, between the ages of nine months and five years, 216 or about 22 per cent. showed tuberculosis present. Still found tuberculosis present 269 times in 769 post-mortems or in 35 per cent. of the cases. Thus we may say that in the hospital material of the great cities tuberculosis is found in about 25 per cent. of the children coming to the post-mortem table, and if a careful search were made this percentage would doubtless be found to be very conservative.

In children it has long been held that when tuberculosis is found in any part of the body the glands, especially the bronchial, tracheal and mesenteric are affected. And it is generally recognized that the glands are the primary focus.

In this connection the reports of Otis and Heubner are interesting. Otis gave the tuberculin test to 85 children with enlarged glands and found that 57, or 66 per cent. showed a positive reaction, while Heubner gave the test to 17 scrofulous children and found a positive reaction in all but one.

We conclude from these statistics, which are supported by general clinical experience, that tuberculosis is very common in childhood and that the glandular system is perhaps the primary seat of infection. What then is to be done?

If we know that tuberculosis is so common in childhood, and that it primarily affects the glands and then extends from them to other organs, would it not be the part of wisdom to treat the disease before this extension has taken place?

The purpose of this paper is not so much to discuss the desirability of such a course for that is self evident, but to discuss the best method of treatment.

For years children with tuberculous glands have been treated with iodine, cod-liver oil, and other tonics either alone or in combination with out-door air. If softening occurred or the gland suppurated removal has been resorted to. Later X-ray has been tried. All of these measures have their advocates, but as yet none have proven sufficiently satisfactory as to hold unquestioned sway.

The strangest thing is the manner in which surgical removal has been received by the medical profession. If there is any condition which is non-surgical, it is tuberculous glands. The glands which are usually removed are those which drain the mouth, nose and adjoining structures. This is done in the belief that such a procedure is removing the tuberculous focus. But it must be remembered that these visible glands are only part of the offenders. It is very rarely that the entire focus can be removed, so the only thing that is accomplished by such a procedure is to remove the ones visible, while others equally dangerous are left behind to menace the patient. Nor is this all. The statistics of operation are anything but satisfactory, for there is a local recurrence in about twenty per cent. of cases and an extension to other organs in about twenty-five per cent. The danger of operating in tuberculous tissue is well known. Vessels are opened up and the bacilli are scattered through the blood stream to infect other foci.

Modern studies in immunity explain the cure in all infectious diseases, and show that this comes about by making the resisting power of the patient greater than the aggressive power of the germs.

Many measures contribute to this end. The usual tonic measures used, such as fresh air, good food, baths and suitable medicinal tonics all act by improving the nutrition of the cell, and raising the patient's natural resistance. Resistance is measured by certain substances found in the blood, which are produced by the body cells. It stands to reason that healthy, well-nourished cells will produce more protective bodies than diseased or injured cells, hence the value of such measures as mentioned above.

Nature's method of curing infections consists in a series of stimulations of the body cells by certain toxic products which are found in the blood stream resulting from the infection. Thus in tuberculosis, there is given out from the seat of infection at various intervals certain toxins which are produced by the tubercle bacillus. These, if not too toxic, stimulate the cells and cause them to produce specific antibodies which attempt to overcome the infection. If, on the other hand, this stimulation is too great, cell injury or destruction results and the protective bodies are not formed or, at least, not in sufficient amounts to cause a cure of the disease. Upon this production of antibodies, this stimulation of the machinery of immunization, depends the question of cure.

It is a principle of bacteriology that each micro-organism contains within itself the properties which stimulate the cells of its host to its (the micro-organism's) own destruction. Since 1890-91 it has been known that tuberculin will, when administered carefully, in properly chosen cases, produce the necessary stimulation to cause a cure in tuberculosis. Further study and clinical experience, and especially the work of Wright, has shown definitely that various products made from the tubercle bacillus have this same power. After their proper administration, the specific antibodies in the blood, upon which the destruction of the tubercle bacillus and the cure of the disease depends, are increased, in some cases enormously. It has also been shown that coincident with this increase in specific antibodies, there is also an amelioration of the symptoms and an improvement in the areas of infection.

These specific products, then, should be used in the treatment of tuberculosis. Their intelligent employment stimulates the formation of protective bodies in the blood and artificially aids nature in the cure.

In tuberculosis of the glands these are of special value because this is the ideal location for a cure to occur, owing to the fact that the glands are constantly bathed in lymph and the antibodies are thus applied in a direct manner. In many instances there is very little difference in the balance between the virulence of the bacilli and the resisting power of the blood. In such cases a few carefully spaced inoculations of bacillary products would undoubtedly hasten and insure recovery. In other instances the cure is more dubious; but in these cases there is nothing that will aid the organism in the fight so much as specific inoculations. Wright, Hektoen and others have shown that by carefully measured inoculations the specific antibodies in the blood can be raised to double and even treble that of the normal. Clinical experience also bears this out. Enlarged glands will yield to proper inoculations of bacillary products in most instances. In my experience of more than twelve years in the employment of tuberculin and other bacillary products, in the treatment of several hundred cases of pulmonary tuberculosis, I have never found an instance of enlarged glands associated with the pulmonary disease that did not heal. Similar observations have been made by others.

If, then, these specific products made from the tubercle bacillus, will aid in curing tuberculosis, and if tuberculosis of the lymphatic glands is an ideal place for the treatment of the infection, and if in childhood the glands are infected before other organs, why not treat tuberculosis of the lymphatic glands in children with specific inoculations before the disease extends to other organs? I would not suggest the neglect of other measures, however, but the use of the specific bacillary products in conjunction with other measures which will build up the patient and increase his resisting power.

Many physicians still fear the use of tuberculin, although it has been shown that its careful employment is unattended with danger. I have given personally in the neighborhood of two hundred thousand injections, and have never seen harm done. It must be remembered that individuals who are infected with tuberculosis are constantly inoculating themselves with tuberculin from the focus of infection, so when the physician artificially inoculates the patient he is doing nothing new. He is not introducing a new poison as is sometimes said by men who fear tuberculin. It is still thought by some men that bacillary products will stir up latent foci, and some are deterred from their use on this account. The proper administration of the remedies cannot do this. The strange thing is that surgeons who have an extension of the disease to other organs following one-fourth of the cases operated should fear this mythical danger which is supposed to occur but not found to do so in actual experience.

After careful study of the subject of tuberculosis of the glands for many years, I am led to the following conclusions:

First, in most instances tuberculosis is primarily a disease of the lymphatic glands, and this infection in many, many instances begins in early life, even although the disease may not manifest itself until adolescence or adult life.

Second, tuberculous lymphatic glands can not be looked upon otherwise than as a menace to the individual possessing them.

Third, when the lymphatic glands which are visible are infected it is probable that others deeper seated and invisible are also infected.

Fourth, surgical removal of visible tuberculous glands does not cure the infection. It simply removes those glands which are in view.

Fifth, surgical removal is followed by recurrence and extension of the disease so often that it is not a satisfactory method of dealing with the disease.

Sixth, the cure of tuberculosis of the lymphatic glands, the same as the cure of tuberculosis wherever found, is brought about by the specific immunizing properties of the blood being brought to play upon the infected areas. Where the disease heals spontaneously, the increase of the specific immunizing bodies is brought about by auto-inoculation from the seat of infection.

Seventh, owing to the fact that auto-inoculation is irregular, and can not be depended upon, artificial inoculations should be used which, when properly spaced and properly regulated as to dosage will produce the same stimulation, and thus raise the amount of protective bodies in the blood. These should be used combined with all rational measures for raising the patient's resisting power, such as good food, open air, and carefully regulated life.

Eighth, tuberculosis of the lymphatic glands in children should be considered seriously and treated before the disease is allowed to extend to other structures.

Concerning Alimentary Intoxication.—FINKELSTEIN (Berlin) has been publishing a series of articles on this subject. In the third instalment of his monograph (Jahrbuch. f. Kinderheilk., July, 1907), he says that four stages of this condition may be recognized. In the first stage, which he calls the stage of disturbed equilibrium, the function of nutrition is disturbed to such an extent that the structure of the body and the degree and kind of growth is below normal. In this stage, however, with a properly regulated diet, the child may apparently be practically normal. Even if the feeding be forced there will be no great increase in weight. The second stage Finkelstein calls the 'dyspeptic stage. In this stage the disturbance is so great that the child only remains free from pathologic symptoms if the amount of food is kept just below the normal limits. If this amount of food be increased there will follow immediately abnormal stools and fever. The third stage is the stage of decomposition. The tolerance for food, at first fatty food and later sugar-containing food, is now greatly diminished. If the food be forced, there is abrupt loss of weight, with oscillation in the temperature curve, frequent subnormal temperature, irregular respiration, cardiac weakness and slowing of the pulse. The fourth stage is represented by the classical picture of auto-intoxication.—Interstate Medical Journal.

TUBERCULAR GLANDS OF THE NECK—THEIR SURGICAL TREATMENT.

By Parker Syms, M. D.

With the advent of successful methods in antiseptic surgery came a very natural enthusiasm for the operative treatment of any disease-conditions that could be operated upon. A result was that surgery in external tuberculosis became almost a branch of science in itself. Tubercular joints were excised; cold abscesses were freely opened and curetted; and tubercular organs, foci, and masses were exposed and removed whenever their situation made operation feasible.

The theory on which this plan of treatment was based, was that the disease was a local one, and that the entire diseased area could be removed, if properly operated upon, thus quickly curing the patient and relieving him of the danger of wide-spread, or of secondary infection from a primary, local site. Many brilliant results upheld the advocacy of this theory and practice. Of course, tuberculosis of the lymphatic glands became a favorite form of this disease for the so-called radical operation.

Early in this era I was surgeon to the Colored Hospital, and the opportunity thus afforded, gave me a fairly large experience in surgery in tuberculosis. During a ten years' service, ablation of tubercular glands of the neck was probably my most common operation. My own enthusiasm and the teaching of that day tended to lead away from a broader view of the subject, but a longer experience and more mature judgment have materially modified my ideas. Today I feel that the so-called radical operation for tubercular glands is very seldom necessary, and that we can successfully and safely combat this disease by a much simpler and less harmful method, in the majority of cases.

To determine the best plan of treatment, it is important that we should take a very practical view of the pathology of this disease and of its life history.

Tubercular disease of the lymphatic glands of the neck is usually a localized manifestation. It may involve both sides of the neck, but it is not usually associated with tuberculosis in other organs; it is commonly a disease of childhood and of adolescence, not often originating in adults. It may be confined to but one or two glands, or it may invade all the glands of a region involved. A mixed infection by pyogenic bacteria will hasten the progress of the disease by establishing an acute inflammation of the periglandular fascia, which will result in a rapid advance of the tubercular lesion from one gland to another. This pyogenic infection may result in a diffuse cellulitis of the neck.

Tuberculosis of the glands may result in:

(1) Cheesy degeneration.
(2) Fibroid degeneration.
(3) Atrophy and absorption.
(4) Abscess (mixed infection).
(5) Calcification.

In a single region we may find glands in each of these conditions, which really represent stages of the disease. Of course, systemic infection may result from tubercular adenitis, but this is a rare occurrence.

It will be well for us now to consider the merits and demerits of the so-called radical operation. Its advocates claim for it the following advantages:

(1) Complete obliteration of the disease.
(2) Avoidance of dissemination.

(3) Avoidance of scar and deformity.
(4) Conserving the patient's strength and vital force.
(5) Assurance of a radical cure without recurrence.

I feel that the first claim is not well sustained. No matter how thoroughly the operation may be performed, nor how early in the disease the attack may be made, complete obliteration cannot be assured.

Dissemination of the disease, I feel, is more likely to be brought about by radical operation than it is to occur during the more conservative method of treatment.

When we come to the question of scar and deformity, there should be no two opinions in the matter. The radical operation makes the most extensive scar possible without any compromise, that is to say it makes an incision throughout the entire length of the region, and of course, dissection and removal of all the lymph glands, lymphatics and their surrounding fat. Of course, the deformity will not be as great as it would be, had extensive sloughing and cellulitis taken place; but this should not be allowed to occur under any circumstances, and is only the result of neglect. The radical operation makes an extensive scar in every case.

As to the conservation of the patient's strength, it is claimed that the operation is less of a strain to these patients than the prolonged treatment of the disease by other methods. This is not to be conceded. Tubercular patients withstand operation very poorly, for their powers of resistance are not good. This fact is often overlooked, for the surgeon sees these patients recover from the operation, but he is not always in a position to watch the later history of the case. Operation in a tubercular subject is often the starting point of a rapidly advancing tuberculosis of the lungs or other vital organs.

The chief claim made for this operation is that it insures a prompt and radical cure, without recurrence; but this claim cannot be sustained. When the operation is properly performed, the diseased area, consisting of fat, fascia, glands, and so forth, should be removed in one mass, exactly as a cancer is removed.

The operation should extend beyond the visible disease. No matter how carefully and skilfully this may have been done, recurrences will take place in the experience of every surgeon.

I must not be understood as feeling that the radical operation has no proper place in surgery, for it must be resorted to in a certain proportion of cases. In patients who are unable to properly carry out the hygienic treatment, owing to their circumstances and environment, it may be wiser to attempt a radical operation. In any case where the more conservative treatment has been tried unsuccessfully, it may be wise to resort to the extensive ablation. In neglected and inveterate cases where extensive breaking down of the glands has occurred, and extensive cellulitis has ensued, the radical operation is often the only proper form of treatment.

My experience has taught me that the large majority of patients may be safely and successfully treated by a system of hygiene combined with slight operations which really become simply an aid to nature in effecting a spontaneous cure. Let us remember that tuberculosis tends to result in spontaneous arrest, and will do so where conditions are favorable. Having this in mind the author has adopted the following treatment for tuberculosis of the cervical lymphatics:

General Treatment.—The patient's life should be an out-of-door one, with proper exercise so regulated that he should never become over-fatigued. As nearly as possible all the hours of sunshine should be spent in the open air. The patient should sleep with his windows wide open, but he should be carefully covered so as not to be chilled, and he should have a warm room to dress in; he should have a cold bath once daily; the utmost care must be given to his digestive functions and the action of his bowels. His food should be of the most nutritious character, and besides his three regular meals he should have milk between meals and upon retiring at night. Drugs are seldom necessary; if the patient is anaemic he should be given iron; the syrup of the iodide is probably the best form for children. The patient should retire early, spending as nearly as possible all the hours of night in sleep. The morning and evening temperature should be recorded, and a careful account kept of the patient's weight.

Local Treatment.—If the enlarged glands are apparently not broken down, the skin of the region should be thoroughly anointed every night with a ten per cent. ointment of ichthyol; this is to be removed in the morning with soap and water bathing. If any one or two of the glands are decidedly larger than the rest, and persistently remain so, or show a tendency to increase and not to diminish, it may be well to make a small incision and remove them. If any of the glands show evidence of having broken down either by cheesy degeneration or abscess formation, an incision should be made, and they should be opened before they have ruptured their capsules. In such event the cavities should be thoroughly curetted and kept open by means of a drain of gauze or rubber tissue employed for a few days, and then they should be treated with a ten per cent. emulsion of iodoform in glycerine.

In the vast majority of cases cure will result if this treatment is carefully carried out. The progress may be slow, but when the final result is attained it will be found very satisfactory, for the patient will have established good health, and will have very little deformity from scars. Of course, this latter will not be true if the case is neglected, and if extensive peri-glandular abscesses have been allowed to form.

The author has had in his experience many cases which have demonstrated to him the truth of the principles, and the value of the methods, here set forth.

52 East 56 St., New York City.

INFANT FEEDING.

By Roger H. Dennett, M. D.

ASSISTANT IN CHILDREN'S DISEASES, POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, NEW YORK.

This paper presents nothing new but is written from two motives, (1) to show the simplicity of reckoning percentages, and (2) to give a routine for applying the method in actual cases. Every physician should be able to compute the percentages in any food a baby is taking, and not depend blindly upon some one else's formula. Such formulas are based upon actual percentages, but we cannot be successful infant feeders unless we know why a given formula is not well borne. If we think of every food as so much fat, sugar, and proteid we may alter any of the constituents at will without referring to another man's scheme of feeding. I believe every successful pediatrist has a certain amount of routine which he doesn't like to put down in black and white because his rules are not invariable. Therefore in the minds of many general practitioners a certain mystery surrounds the subject. The second part of my paper will be devoted to a few general rules, none of which are new but are set down to give the practitioner a routine that he may start upon and develop more fully as his experience in this subject advances. I shall deal with the whole subject in a very elementary manner.

Composition of Milk.

Cows' Milk contains on the average fats 4%, milk sugar 4%, proteids 4%, salts and water.

The Fats, suspended in the milk in fine globules, are a mixture of different fats, but seem to be digested by the infant as easily as the fats of human milk except when the natural arrangement of the globules is broken up by centrifugalization or heating. They supply heat and energy, but do not build up new tissue, saving the more difficultly digested proteids from this work. The lecithin they contain is valuable in building up new nerve tissue.

Milk Sugar, though differing from that of human milk, seems to be digested by the infant as easily. It serves the same purpose in the economy as fat.

The Proteids are the tissue builders and without them in proper quantity an infant cannot have good strong muscles and other organs. They are at least five kinds, divided into two varieties, the caseine (or curds), and the albumins (or whey) which are digested with little change in the gastro-intestinal tract. These proteids are now known to differ materially from the proteids of human milk. They are not affected the same either by rennet or acids and are more difficult for the infant to digest than the proteids of human milk. For this reason cereal gruels are used to dilute cows' milk for infant feeding because it has been found in the laboratory and in practice that the proteids are thus rendered more digestible.

Cows' Milk	4% Fats	Very rich milk	5%
		Average Milk	4%
		Thin milk	3%
	4% Sugar		
	4% Proteids	usually	4%
		thin milk	3%

Human Milk	4% Fats	(3% to 5%)
	6% Sugar	(6% to 7%)
	2% Proteids	(1% to 2%)

MODIFICATION OF MILK.

Proteids. In order to reduce the proteids from the 4% of cows' milk to the 2% or 1% as found in human milk, the milk must be diluted. If one part of milk and one part of diluent are used we get 2% proteid in the mixture; diluted four times we get 1% proteid, eight times ½% proteid, etc.

Fats. But in lowering the proteids we are also reducing the per cent. of fats and sugar to 2% or 1% or ½% and our modification, like human milk, should contain 4% fat, 6% sugar. To overcome this we use a milk much richer in fat and add commercial sugar. To get this richer milk, whole milk is put in tall narrow bottles immediately after milking and in four hours, if kept cool, practically all the fat has risen to the top. By dipping off a definite amount from the top of the bottle we get a definite per cent. of fat as well as proteids. A Chapin dipper holding just one ounce is used for this purpose.

Average Milk 4% fat

	Fat	Proteid	Sugar
Top 9 ounces contains	12%	4%	4%
Top 16 " "	8%	4%	4%
Top 20 " "	6%	4%	4%

To show how simple the whole subject is these are the only figures we need memorize if we are dealing with the average milk. Then by diluting one of these top milks we can get any per cent. of Fat and Proteid we need for an infant. For example: We want to feed a baby a milk containing Fat 4%, Proteid 2%. We take the top 16 ounces and dilute it 2 times.

	Fat	Proteid	Sugar
2	8%	4%	4%
	4%	2%	2%

If we want a Fat 3%, Proteid 1%, we take the top 9 ounces and dilute it 4 times i. e., 1 part top milk, 3 parts diluent.

	Fat	Proteid	Sugar
4	12%	4%	4%
	3%	1%	1%

If we want a Fat 1.50%, Proteid .50%, we take the top 9 ounces and dilute it 8 times i. e, 1 part top milk, 7 parts diluent.

	Fat	Proteid	Sugar
8	12%	4%	4%
	1.50%	.50%	.50%

Any creamery has the apparatus for obtaining the fat content of milk and it is always well to find out the per cent. of fat in your whole milk, as once ascertained, the milk of a herd will remain fairly constant. Tables appended below will give the figures for other than average or 4% milk.

Sugar. One ounce of sugar (cane or milk) to 20 ounces of the modification raises the sugar to six per cent. One dipperful or two level tablespoonsful equals one ounce granulated sugar, three level tablespoonsful of milk sugar equals one ounce. As a routine cane sugar may be used.

Diluent. Gruels, instead of water, are used to dilute the milk because; 1—They mechanically hold the curds of milk apart and render them spongy and flocculent, therefore more easily digested. 2—When dextrinized they contain proteid in appreciable amount for an infant unable to digest the proper quantity of milk proteids. 3—They can be easily and cheaply prepared.

Two kinds of gruels are used, plain gruels and digested or dextrinized gruels. The digested gruels have their starch changed into dextrins and maltose and their proteids into a soluble form.

Preparing Gruels. Mix to a thin paste four level tablespoonsful of barley, wheat or rice flour, or four heaping tablespoonsful of rolled oats. Pour on one quart of boiling water. Boil at least 20 minutes in covered double boiler. To dextrinize, cool until it can be tasted, add one teaspoonful of "Cereo" and stir. This will thin the gruel. We may increase the proteid of a food by increasing the quantity of the cereal; eight level tablespoonsful to the quart gives a gruel of 66% proteid and 4¾% carbohydrates.

Preparing Whey. Heat 1 qt. of milk to blood heat. Add 1 junket tablet (obtained at any grocery store) dissolved in one ounce of water; or ʒii of essence of pepsin. When the curd forms, strain off the whey through a cloth and set on ice.

FEEDING SCHEME FOR AVERAGE WELL CHILD.

Age	Number of feeding in 24 hours	Size of feedings	Intervals	Fat %	Proteid %	Sugar %	
1st Week	9	1-2 oz.	2 hours	1.50	.50	6	Feed only from 6 A. M. till 10 P. M. One Night feeding between these hours until the third month.
2-4 Week	9	2-3 oz.	2 hours	2.00	1.00	6	
2nd Month	9	2-3 oz.	2 hours	3.00	1.10	6	
3rd Month	7-8	4 oz.	2-3 hours	3.00	1.50	7	
4-6 Month	6	4-6 oz.	3 hours	3.00	1.50	7	
6-9 Month	6	7-9 oz.	3 hours	3.00	2.00	7	
1 Year	6	9 oz.	3 hours	Whole milk			

After the second month an infant should have at each feeding one ounce more than the number of months of its age.

Two hour intervals up to the third month, during the third month 2½ hour intervals. After that three hour intervals.

Rules for Feeding Sick Babies.

(1) Given any infant with pathological vomiting and frequent green stools containing curds and possibly mucus and blood. Stop milk altogether, clean out gastro-intestinal tract with 1-10 grain calomel every half hour for 10 doses and feed a plain dilute gruel.

(2) As soon as the gastro-intestinal symptoms have subsided, as they do in the milder cases in a day or two, begin your

modified milk as follows. Give the top 9 ounces diluted 8 times (adding sugar 5%) i. e., fat 1.50%, sugar 6%, proteid .50%. If this is well borne after 1 to 3 days give the top 9 ounces diluted 7 times i. e., fat 1.70%, sugar 6%, proteid .60. If the baby is still doing well in 2 or 3 days give the top 9 ounces diluted 6 times, i. e., fat 2%, sugar 6%, proteid .70%. A few days later increase to a dilution of 5, i. e., fat 2.4%, sugar 6%, proteid .80% and so on until the baby is getting the proper percentages for its age. This is of course the ideal case which unfortunately we do not always see. We may have to stop increasing the strength of the food before we get to the correct percentages, we may have to drop back to a more dilute milk or even go back to a plain gruel again if gastro-intestinal symptoms appear.

(3) Do not attempt to give any fresh milk mixtures until, (a) the curds have ceased, (b) there is no great amount of mucus, (c) no blood, (d) the number of stools has fallen to at least 4 to 6 in 24 hours, (e) the rectal temperature (when gastro-intestinal) is not over 100°.

(4) Do not keep any infant upon the dilute gruel or any other food not life sustaining for over 3 days.

(5) If, after 3 days, milk mixtures cannot be begun try one of the following foods: (a) half whey and half gruel or water, (b) dextrinized barley, wheat or legume gruel made very strong to get a high vegetable proteid, to which the raw white of an egg may be added if the stools are not foul, (c) skimmed milk diluted 8 times, boiled and peptonized, (d) condensed milk one heaping teaspoonful to a tea cup of hot water. These five different foods increase the resources of a feeder in a difficult case. I mention them in the order of their usefulness. It is well to give one a faithful trial before discarding it for another. If well borne increase the strength of the one selected as rapidly as possible.

(6) When the child fed on the above substitute foods is doing well, i. e., no longer showing gastro-intestinal symptoms mentioned in (3), add top milks to the food already used as directed in (2), the substitute food taking the place of the diluent.

As the strength of the top milk increases, gradually decrease the substitute food putting the same amount of gruel in its place.

(7) Always aim to eventually reach a formula containing fat 3%, sugar 6%, proteid 2%.

(8) Before deciding to change a food on which a baby ought to be thriving find out if (a) the milk used is a good milk, (b) the bottle and nipple are cared for properly, (c) the food is taken in proper amounts, (d) at regular intervals, (e) not too fast, (f) the baby is allowed to lie quietly after feeding, (g) does not have a "baby comfort," (h) has plenty of fresh air.

(9) A baby doing poorly on a proprietary food, condensed milk or any other poor food, should not have this food abruptly taken away if there are no gastro-intestinal symptoms. Instead gradually introduce a top milk as in (2) using the poor food as a diluent until a gruel can be safely substituted for it.

(10) Breast-fed infants doing poorly (if the breast milk cannot be improved) should not be suddenly taken from the breast unless there are marked gastro-intestinal symptoms. Instead give low modifications at alternate feedings increasing the strength of the artificial food as in (2). When the food contains the proper percentages for the age of the infant give only two breast feedings a day. Then stop the breast altogether.

(11) Curds in stools may be due either to too high proteids or too high fats. If a few drops of ether are mixed with the curd the fat will be dissolved showing whether it is a fatty or proteid curd. The majority of curds in stools are due to high proteid.

(12) Vomiting is often due to too high fats. This is still more apt to be the cause if the stools are normal or nearly so. Excessive amounts of sugar or malt (in proprietary foods) may be the cause of vomiting.

(13) Foul stools are due to decomposing proteids and should put us on our guard.

(14) Numerous yellow watery stools are usually of nervous origin. Hot weather or extreme weakness or long continuation of too little nourishment will bring on these stools.

(15) Rarely a baby is found who has a marked idiosyncrasy for milk and cannot take it at all.

(16) In some extreme cases of infant feeding nothing but a wet nurse will save the life of the baby.

(17) There are only three drugs that are useful as a routine. (a) Strychnia gr. 1-300 every 4 hours in all the cases that have been poorly nourished for any length of time. The efficacy of this drug is often demonstrated by a rapid diminution in the number of stools especially where they are of the yellow watery variety of weakness. (b) Bismuth subnitrate gr. xx after each loose movement. It should be given in the form of a powder moistened with water and never in syrup or other mixtures. It is of most value in the acute cases. (c) Tincture Opii Camphorata mm v to x after each loose movement, in cases where there is no undigested food in the stools and no temperature, provided the movements are being kept up simply by irritability of the bowel. This drug has a less wide range of usefulness than any of the others and should be used with caution.

ADDITIONAL TABLES.

		Fat.	Proteid.
Very rich milk (5% fat)	Top 9 oz.	15%	4%
	Top 16 oz.	9%	4%
	Top 20 oz.	7%	4%
Average milk (4% fat)	Top 9 oz.	12%	4%
	Top 16 oz.	8%	4%
	Top 20 oz.	6%	4%
Thin milk (3% fat)	Top 9 oz.	9%	3%
	Top 16 oz.	6%	3%
	Top 20 oz.	5%	3%

Ratio of Fat to Proteid in any milk

	Fat to Proteid
Top 9 oz.	3 to 1
Top 16 oz.	2 to 1

Top 9 oz. contains three times the per cent. of fat in the whole milk

Top of 16 oz. contains twice the per cent. of fat in the whole milk

NOTE. The dextrinizing agent "Cereo" is mentioned because it is the only one I know of that will keep indefinitely. This and the Chapin dipper may be obtained of The Cereo Company, Tappan, N. Y.

A REVIEW OF SOME POINTS IN PHYSIOLOGY OF THE CIRCULATION WITH SPECIAL REFERENCE TO THE INTERPRETATION OF DISORDERS OF THE HEART AND BLOOD VESSELS.

By Louis Faugeres Bishop, A. M., M. D.

CLINICAL PROFESSOR OF HEART AND CIRCULATORY DISEASES, FORDHAM UNIVERSITY, SCHOOL OF MEDICINE, NEW YORK CITY; PHYSICIAN TO THE LINCOLN HOSPITAL.

It is a curious fact in medical history that it is only in recent years that disorders of the heart and circulation have been studied particularly in the light of the physiology of the circulation. Every one who has followed the work of the last few years must be impressed that it has been fruitful, particularly with reference to treatment. Further study of disorders of the circulation from this point of view, is greatly needed. There are numerous problems that ought easily to be settled by direct observation and experiment. The trouble has been that we have assumed a knowledge of the circulation that we do not have, because the conditions are much the same as when I began to study medicine, at which time John C. Dalton said in the preface of his book on "Doctrines of the Circulation": "At the present day the circulation of the blood is so familiar to us, and so easily demonstrated by methods accessible to all, that we regard it as one of the simplest facts in physiological science; and we are apt to look with surprise at the mental blindness of the older physiologists who did not know it, or who were reluctant to acknowledge its truth when first announced. But these men were neither ignorant nor dull. They were conversant with everything then known in physiology. Many of them were laborious, original investigators, who contributed not a little to the advancement of science, and who were equal, in learning and capacity, to any of the celebrities of modern times. It becomes apparent, in reading their works, that the knowledge of the circulation of the blood was no easy acquisition. In the dead body, the blood in the blood vessels was as stationary as the bile in the gall-bladder; and its movement during life was indicated by no external sign. Like many other things of a similar kind, when once fully demonstrated it seemed plain enough: but until then it was one of the secrets of nature, not to be unveiled except with much labor and after many trials."

Now while the circulation as a beautifully working mechanism as Dr. Dalton says, easy enough to observe as a fact in physiology, the machinery by which this beautiful exhibition is carried on has not been at all well understood, and in its relation to diseases, has in the past, been much misunderstood. The impetus has been given by the general observation of blood pressure in health and disease. This has brought out many anomalies; we have found high pressure where we expected to find low pressure, and low pressure where we expect to find high pressure. We have found patients dying of failure of circulation with perfectly healthy hearts, because of a failure of the peripheral circulation and we have found them living in fair health with badly diseased hearts, because of the compensatory action of these same blood vessels. Some of the facts that would seem of most importance have been impressed by the study of the pathology of function in regard to the circulation.

We are in much the same relation to the circulation as the average observer is to a railroad train passing rapidly across his view. He knows the general principles by which the train goes, and he accepts as a fact its wonderful mechanism, but he really has no practical knowledge of its regulation and of many essential points in its mechanism. The deeper study of the circulation shows the supreme importance of the mechanisms that lie outside of the heart.

Some elementary questions are:

What is the velocity of the pulse wave?

What is the rapidity of the blood stream?

What is the length of the pulse wave?

These are not academic questions but in fact they are vital to an understanding of the circulation. The velocity of the pulse wave is very great, averaging twenty-five feet a second. It proceeds with uniform speed from the heart to the periphery without regard to the rate of the blood stream, just as the waves on a river have no practical reference to the flow of water. The pulse wave is a wave of pressure. The blood stream varies greatly in rapidity near the valves, while the ventricles are contracting it is 1200 millimeters a second, but as the area that must be filled with blood increases as the number of vessels increase, the stream becomes slower so that in the descending aorta it is only half as rapid. In the arterioles it is again only about half as rapid as in the descending aorta. In the arterioles it is only about one twenty-fourth as rapid as it is at the heart: and in the caspillaries it is one hundred times slower still. Then the speed of the stream gradually increases from the venous radicals to the small veins, and from the small veins to the vena-cavae. The distinction between the pulse wave and the blood stream should certainly be clear in the mind of every one treating conditions involving the circulation. The length of the pulse wave has nothing whatsoever to do with its velocity or with the blood stream. It is surprisingly long, in fact, about as long as the average wave seen on a river. In other words eight to twenty-five feet long. Imagine a man floating on a river with waves twelve feet long and it is evident that the crest of such waves will touch pretty much the whole of his body at the same time. The crest of the pulse wave in the same way touches every part of the arterial system at pretty much the same time so that there is not more than a sixth of a second difference in the time when it may be felt in any two parts of the arterial system. The study of the pulse which involves all these considerations is an old affair as compared to the study of blood pressure.

The physiology of blood pressure in relation to disease has recently received a new impulse. One of the most valuable points taught in the study of the physiology of the circulation in connection with disease, and a point which is particularly valuable with regard to children because children present, as a rule, healthy structures, is that blood pressure only fails from diseases of the heart muscle when this is badly damaged. Blood pressure is maintained by contraction of the blood vessels for a long time after the resources of the heart muscle have been impaired. On the other hand the low pressure of valvular disease is not nearly so well compensated by arterial contraction, but must be compensated by increased power of the heart muscle, hence it is fair to draw the conclusion that the low tension found after infectious disease is not often as we have always supposed, due to myocarditis as it is defective action of the vessel tone maintaining centers in the medulla and elsewhere or at least a failure of the vessels to respond. In other words the myarterium and not the myocardium may be at fault.

54 West 55th St., New York.

THE BREATH SOUNDS OVER PLEURAL EFFUSIONS IN CHILDREN.

By J. R. Clemens, M. D.

PROFESSOR OF PEDIATRICS, ST. LOUIS UNIVERSITY, ST. LOUIS, MO.

The clinical signs elicited by the stethoscope over pneumonias and pleural effusions of childhood bear an unenviable and notorious reputation. No one physical sign met with in children is so much at variance with the standard adult clinical phenomena as is that of the presence of breath sounds over fluid in pleural effusions.

The explanation herein submitted will I trust convert one especially onerous and puzzling mnemonic into a sign of easy interpretation.

In the adult the chest wall is unyielding. The fluid that is poured out in a pleurisy is accommodated at the expense of the lung which is not only compressed but also retracted. The absence of breath sounds is a natural consequence.

In the small child, on the other hand, the chest wall is elastic and plastic. In the presence of fluid the chest wall yields and allows not only the fluid to accommodate itself but also full inflation to the lung beneath. Breath sounds are therefore present.

When the accommodative power of the thoracic parietes has reached its limit, the mechanism then obtains as in the adult type of pleural effusion and the lung becomes retracted. Then we notice in long standing and extensive empyemata in children absence of breath sounds as in the adult.

It it needless to add that, of itself, fluid is a good conductor of sound and that the absence of breath sounds over fluid in the adult pleura is due not to the presence of the fluid but to the absence of air in the lung owing to the retraction of lung tissue under hydrostatic pressure. An explanation that has been advanced to account for the difference noticed over collections of fluid in the pleurae of children and adults is that the bronchial tree element predominates in the young lung and owing to this predominance sounds are propagated to the ear. If this explanation held true then breath sounds should be audible in large effusions in children, which statement is not in accord with clinical experience.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

REGULAR MEETING HELD JANUARY 2, 1908.

ARRANGED BY SECTION ON PEDIATRICS, THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR; TUBERCULOSIS IN INFANTS AND CHILDREN.

"THE PATHOLOGIC FINDINGS."—Dr. John McCrae of Montreal, Can., said that when one dealt with the pathology of tuberculosis in children one ventured on controversial ground, but that he would try to state only what seemed to be safe conclusions. The first year of life was comparatively free from tuberculosis, Schwer found 14% of his series of autopsies between two and twelve months to be tuberculous. In children up to fifteen years of age there were several groups of cases; first, those who in early infancy have intestinal tuberculosis; second, those of any age who store up the germs for a longer or shorter period of time and finally suffer from an infection which is generalized, and which shows itself in a variety of forms; third, those few older children who develop phthisis. Much interest centered about the primary intestinal tuberculosis of young children. He thought that in this country we would concur in the reasonableness of Dr. Bovaird's estimate of twice in 125 cases, and Dr. Holt and Northrup's 1.3

per cent. Tubercle bacilli were probably originally all of one kind, but by lapse of time and difference of environment strains have been developed so that now we had human, bovine, avian, piscine, etc.: each of these was weakly pathogenic for races other than its own host race. It was probably the case that the average human being could overcome an infection of bovine tuberculosis more easily than that by human bacilli, nevertheless it was certain that a number of bovine infections occurred. There was a type of tuberculosis in children called "bovine," a slowly progressive tuberculosis tending to much overgrowth, and to dry caseation, which affected mainly lymph nodes anywhere in the body. One could today at times isolate from such foci, bacilli that have the distinctive cultural characteristics of the bovine form, and the bovine grade of virulence towards animals, in the laboratory. Children were liable to infection by air-borne bacilli of the human type and were liable to infection by ingestion of bovine bacilli from milk and other forms of food of which milk was a component part. European figures, collected in Lubarsch and Osterag showed that of 396 examinations, 9 per cent. contained bacilli and of 244 butter examinations, bacilli were found in 8.3 per cent. Cultural studies made in Germany, the United States and England upon the bacilli isolated from cases of tuberculosis indicated that of children under five years of age, affected by tuberculosis, four-fifths were probably infected by air-borne human bacilli, one-fifth might show the bovine form and this percentage decreased greatly as age progressed. Once infected the course of the bacilli in the lymphatics of the body was interesting, but obscure. We must probably admit that bacilli could pass through tissues and glands without leaving traces visible to the naked eye, and could remain in tissues for a considerable length of time without exciting lesions except those so slight as to be recognizable only by the miscroscope. In air-borne infections, the first site was in some part of the lymphoid tissue of the upper air passages or the lungs, and in intestinal infections, the mesenteric nodes. If the mesenteric nodes showed caseous or calcareous change more marked than the thoracic, or if there was ulceration of the bowel or tubercle of the mucosa without cavitation of the lungs, or if the bovine form was isolated, intestinal infection was suggested in artificially fed children. He thought that advanced thoracic lesions should be allowed to weigh in favor of infection of the respiratory channels. It had been his experience that in foundlings, segregated and artificially fed on Pasteurized milk, there was practically no tuberculosis. His experience with these children led him to believe that there was less intestinal tuberculosis of infants than we had been urged to think. He asked what was to be made of the fact that in Japan, where bovine tuberculosis was non-existent, and where children were not milk fed as a general rule, that infantile tuberculosis was yet very frequent? Perhaps the truth was that we had laid too much stress on milk borne tuberculosis, and had forgotten that children were more liable to the human form of tuberculosis than adults, and that if they do become exposed to a house or other local infection, they spend less time away from their dangerous surroundings than did their adult relations. He felt sure that the reason the disease manifested itself in bone or joint and remained there was some expression of the sum total of lowered bacterial virulence and heightened resistance of the individual tissues. He did not feel prepared to accept the theory that such infections were necessarily bovine. Of the lymphatic form he said he knew but little to say. The concentration of the disease in the lymph nodes might be but a mark of the tremendous fight the lymphoid tissue was making, and perhaps the universally tuberculous nodes was but another expression for a generalized miliary tuberculosis, but one that had been countered by a better resistance on the part of the child. He said that meningeal tuberculosis seemed to him in a large percentage of cases to be merely a local evidence of a generalized tuberculosis. It occurred either as secondary to a bronchial or other gland infection without there being disease elsewhere, or as a local manifestation of the disease that existed in many other organs. The latter was the more frequent. In a series of 1000 autopsies there were 29 cases of tuberculous meningitis and 21 of these had generalized tuberculosis of many organs. Thus nearly 80 per cent. of tuberculous meningitis had hopeless extension of the disease elsewhere. Of generalized tuberculosis his experience was that the most frequent site of involvement was the lung, which was infected in 95 per cent. of cases. Tuberculoma in the brain was almost one-fourth as frequent as meningeal involvement. The question remained obscure as to how the bacteria actually passed the surface of pharynx, bronchus or intestine. Few observers believed that a lesion was necessary. Probably small growing colonies on the surface could exert an erosive action on the mucosa by their toxines. Was it worth considering if the youthful mononuclears, exalted in numbers as they were in childhood, were more avid to take up tubercle bacilli than their more fastidious successors?

RECENT DIAGNOSTIC METHODS.—Dr. W. H. Park said that he would limit his remarks to the recently proposed skin and eye inoculations. In speaking of the reaction following inoculation he said that if one took an animal, and injected it with a minute quantity of serum, that animal would be sensitized after ten days. If a fairly large quantity of the serum was injected the result would be absolutely harmless, while if the same dose were given to an animal not sensitized the animal would die in convulsions. It had been found that white of egg would sensitize an animal. If one injected a guinea pig or rabbit with dead tubercle bacilli the animal would be sensitized after ten days. This sensitization would last for months or longer periods, until the newly formed substance was eliminated from the body. The important point is that a minute quantity of suitable proteid would thoroughly sensitize an animal or man to similar proteids, while larger quantities did not experimentally sensitize much more than the minute quantity. Reaction from the subcutaneous injection of tuberculin was not a reaction because of the presence of tubercle poison in the body but because of the formation of antibodies due to the body having reacted to the tuberculous infection. Therefore if the body ceased to produce these protective substances the poison in the tissues adjacent to the disease and in the circulation would not be neutralized and no tuberculin reaction would occur. These reactions were not due to bacterial poison but to the body products produced in response to the poison; consequently there would frequently be no reaction in advanced cases. The old method of injecting subcutaneously minute quantities of Koch's original tuberculin, using 1-1000 dilution, and giving from one to five c.c. subcutaneously and increasing the dose would give a temperature curve and slight local disturbance at the seat of the disease. Von Pirquet, Wolff, Eissner and Calmette brought out new methods this last summer. Von Pirquet tried placing tuberculin upon the abraded skin and found that in tubercular cases he got a typical reaction. He usually took an arm and made a small vaccination mark by rotating the point of the vaccine blade against the skin. This was the control spot. Two other scarifications were made and rubbed with a 25% solution of Koch's tuberculin. Tuberculin could also be applied to an ordinary vaccination abrasion made by a needle. In from eight to twenty-four hours a papular swelling appears and redness the size of a dime or even of a quarter is evident. By contrasting the reaction of the two scarifications with tuberculin with the one without the tuberculin one could judge the difference between the very slight inflammatory reaction due to the abrasion and that due to the tuberculin. The method used by Dr. Park in making the opthalmo-tuberculin diagnostic test was as follows:

Method of Application: Two solutions are employed in diagnosis which contain 0.5% (No. 1) and 1% (No. 2) respectively and which may be used successively in each eye if the time permits. In this way unnecessarily severe reactions may be avoided.

The eyelid should be held down until the drop is distributed about the sac without overflowing on the cheek. The same eye should not be used for a second test as it appears to become sensitized to some degree by one test. The tested eye should be kept from external irritation, by rubbing, dust, wind, smoke, etc.

Reactions: The first symptoms of reaction appear in from three to twelve hours in most cases, but may be delayed for 24 and even 48 hours, and continue for a week. The presence of a reaction was indicated by a scratchy feeling, secretion and redness of the inner canthus, caruncle or lower lid which may increase and include the entire conjunctiva with edema of lids.

Dr. Park proposed the following scheme for recording reactions.

Negative: No difference in color when lower eyelids are pulled down.

Doubtful: Slight difference with redness of caruncle.
Distinct palpebral redness with secretion.
Ocular and palpebral redness with secretion well marked.
Deep injection of entire conjunctiva with edema of lids and photophobia and secretion.

Contraindications: Any existing disease of the eye or lids, conjunctiva, blepharitis, trachoma, keratitis and irritis. Eye strain from errors of refraction need not prevent the use of the test.

Dr. Park has seen twenty cases of this kind and in most all of them the reaction was quite marked. In about thirty-three per cent. there was in a short time a rise in the temperature of from one to one and one-half degrees also, with the reaction. In the cases that he had seen there were no other constitutional disturbances. Wolff-Eissner believed that he might get the same reaction by applying the tuberculin to the conjunctiva using a one to ten dilution, and placing one drop of it on the lower lid. This gave a marked reaction. Calmette in order to avoid such a marked reaction or any non-specific irritation tried the method of purifying the tuberculin by precipitating the toxins in a 65 per cent. alcohol. He then washed and dried the precipitate and made a one per cent. solution of it in water, and this solution was used by the Wolff-Eissner method. It was important to note carefully the condition of the two eyes before the inoculation, because one eye might be previously congested. The reaction might develop in from six to thirty-six hours. If one could make only one examination this should be made after twenty-four hours. The exact amount of reaction should be carefully noted. The reaction if very marked might last for a few days or even a week but left no lasting ill effects. Dr. Cutler in 200 cases had seen no bad effects from the use of the tuberculin in this way. Dr. Park had seen over a hundred cases and no bad effects. It was still too early to estimate the exact value of either the skin or eye reactions. It was generally considered that the skin reaction was a little less apt to occur than the eye reaction. In young children the reaction was believed to indicate an active form of tuberculosis, while in older children it became less definite. In an adult it was hard to know whether there was an active or a later tuberculosis or whether the bacilli had simply been absorbed through the mucous membrane giving no reaction whatever but sensitizing the individual. Negative results were helpful in excluding absorbed tubercle bacilli or latent or active tuberculosis. Dr. Park said the cases he had tested at North Brother's Island illustrated the difference between the two tests. These were four adults believed to have pulmonary tuberculosis; the eye test was positive in three and doubtful in one. The vaccination test was positive in three and negative in one, the same one in which the eye test was doubtful. The control cases were three children who were convalescing from scarlet fever. Both tests were negative in two. The eye test and vaccination test were negative in two. The eye test and vaccination test were positive in one; the mother of this patient died of consumption. The tests at Gouverneur Hospital on 12 children, all living in families in which there was a case of tuberculosis, showed the eye test positive in five, doubtful in three and negative in four. The cutaneous test made on ten was positive in four, doubtful in two and negative in four. In one of these cases the eye test was doubtful and the vaccination test was negative; while in another the eye test was negative and the vaccination test was doubtful. In a third case both tests were doubtful. Dr. Park said that patients sometimes became alarmed and they interpreted a positive reaction to mean active and advancing tuberculosis where it might mean nothing more than a recently healed point of infection. Very anæmic as well as advanced and dying patients did not react well. The tuberculin precipitate as used in the eye, was fairly stable and could be kept for at least six months.

LABORATORY AIDS TO THE DIAGNOSIS OF TUBERCULOSIS IN INFANTS AND CHILDREN.—Dr. T. Homer Coffin said that the value of laboratory methods in diagnosis were often overestimated. The laboratory findings should be considered in the light of an important symptom, and with the general clinical picture, for there were few instances in which they might be infallible or pathognomonic. Microscopical examination of the blood in children in the various forms of tuberculosis showed a diminution in the hemoglobin and number of the red blood corpuscles. There may be a leucocytosis if the process is associated with suppuration, though some cases of tubercular suppuration may show none. A blood count may in some cases be of value in differentiating tubercular from other forms of meningitis. In the former the count was about normal, while in the latter a leucocytosis was found. Examination of the blood might be of value in differentiating miliary tuberculosis from malaria or typhoid fever. Tubercle bacilli had been demonstrated in the blood but for diagnostic purposes blood cultures or animal inoculation must be done. Examinations of the urine could be of value only in tuberculosis of the urinary tract. Chronic cystitis or tubercular pyelitis might be local manifestations of a general tubercular process. The bloody sediment in uro-genital tuberculosis contained shred-like somewhat ragged flocculi which showed pus cells and fatty detritus, and if smears were made and stained tubercle bacilli were found as dense collections among these calls. In examining urine for tubercle bacilli one must guard against mistakes with the smegma bacillus. To exclude its presence the penis or clitoris are thoroughly cleansed and the bladder catheterized.

In the examination of sputum in children there is often difficulty in obtaining specimens. To obviate this difficulty, the stomach tube, inversion of the child during a paroxysm of coughing or expectorant mixtures may be employed. Holt in 67 cases of pulmonary tuberculosis in children under two years of age made the diagnosis in 80 per cent. of the cases before the disease was far advanced as regarded physical signs. Examination of the bloody sputum in older children often revealed the presence of tubercle bacillus.

In regard to the examination of the fluids of the body he said that polymorphonuclear leucocytes had always been regarded as evidence of recent inflammation, and mononuclear cells as evidence of a milder or later stage of inflammation. The latter cells were thought to be the result of regenerative processes consecutive to inflammation. This explained the presence of large numbers of mononuclears in tubercular exudates. In tuberculosis of the cerebro-spinal canal, pleural, pericardial and abdominal cavities the mononuclears do not always predominate in the fluid. Cases known to be tuberculosis have shown the polymorphonuclears most numerous in the early stages of the disease, but later the mononuclears predominate. Therefore the predominating type of cell is more indicative of the stage of the disease than of its etiology. In cases of tubercular meningitis Holt recommended that the fluid be allowed to stand for twelve hours, when the bacilli are found in the coagulum that forms at the bottom. Examination of the feces in children having pulmonary tuberculosis may be of value as the sputum is often swallowed. In tuberculosis of the intestine, associated with blood mucus and diarrhoea the bacilli were usually found after careful research. The number of bacilli in relation to the mass of feces is small, and if one examines the portion of the stool containing blood and mucus the bacilli are usually found. Care must be exercised here also to exclude the smegma bacillus.

"CHANNELS OF COMMUNICATION; THEIR RELATIVE SIGNIFICANCE."—Dr. S. McHamill of Philadelphia said that the mode of entrance of the tubercle bacillus into the human body remained at present an entirely unsettled question. The avenues by which the tubercle bacillus gets into the human system are, the maternal circulation, (congenital tuberculosis); the skin; the ear; the conjunctiva; the uro-genital tract; the respiratory and intestinal tracts. It was held by some that when the tubercle bacillus was introduced into the human body it might remain alive and virulent for an indefinite period before infecting the organism. Hence it followed that tuberculosis need not make itself manifest during the first few weeks of life. Numerous post-mortem examinations of infants born of tuberculous mothers and dying during the first few weeks of life have shown no macroscopic evidence of the disease and their lymphatic glands when inoculated into animals have failed to produce tuberculous lesions. On the other hand the advanced lesions of tuberculosis in infants dying within the first two or three weeks after birth were often very difficult to explain on the basis of post-natal infection, although there were instances of tuberculosis developing within this period, born of non-tuberculous parents and without histories of exposures. The evidence at hand led us to the conclusion that foetal infection, as compared with the other forms was exceedingly rare. The frequency with which the tubercle bacillus obtained entrance to the body through the skin was extremely difficult to determine, but it was generally supposed that this method of infection was uncommon. Experimentally it has been proven by Cornet that inunctions of sputum over the skin of the cheek, nose, etc. would produce not only local lesions, but involvement of the cervical glands, the bronchial glands and later the lungs, liver and spleen. It was admitted also that the bacillus might pass through the skin without leaving any trace, and in like manner through regional lymph glands to produce lesions of the more remotely situated organs. The other avenues of external infection, the conjunctiva, the ears, the uro-genital tract were less frequent but well established. In the vast majority of tuberculous subjects infection occurred either through the respiratory or alimentary tracts, and it was regarding the relative frequency of these two modes of infection that there existed such differences of opinion. It was demonstrated that we could not safely determine the portals of entry of the tubercle bacillus from the appearance of the lesions found at autopsy and we were compelled to turn to animal experimentation. Such experimentation had shown that infection through the nose and the lymphatic tissues of the naso-pharynx which was generally admitted had been shown not to occur as often as had generally been supposed. It had been made evident by the experiments of Cornet and others that the tubercle bacillus might enter the human body through the medium of the lower respiratory tract and induce lesions in the lungs and bronchial glands. Flügge produced pulmonary tuberculosis in guinea pigs, rabbits, goats, calves and dogs by inhalation. The bacilli were floated in the air in the shape of droplets. He showed that the quantity of bacilli required to produce manifest disease, when ingested with the food was millions of times larger than when infection was by inhalation, and the fatal termination takes place at a much later period. On the other hand the work of Bartel and Spieler seemed to indicate just as clearly that the intestinal tract was the most common mode of infection. He outlined the work of a number of experimenters and concluded that: 1. It is impossible to gain any knowledge of the port of entry either from the location or the degree of development of the tuberculous lesions. 2. Foetal infection is proven but not common. 3. Infection through the mouth, tonsils and pharynx is of frequent occurrence and may be produced by inhalation or ingestion. 4. Primary inhalation infection through the lungs does occur. 5. Infection through the intestinal tract is definitely proven. 6. The bronchial glands and lungs may be infected through the latter channel as well as through the lungs. 7. The relative significance of the various modes of infection is very difficult to determine, on the basis of our present knowledge, since it has been clearly shown that it matters not from what point the tubercle bacillus is introduced it can eventually reach the bronchial glands and lungs without leaving any evidence of its mode of entrance. It is probable however, on account of the greater exposure of these portions of the body, that infection through the upper respiratory and alimentary tracts is the most common, and next to this and for similar reasons, through the lower respiratory and intestinal tracts. If infection occurs when the bacillus is introduced in the food, or carried to the lips and mouth in kissing. or by infected hands, nipples, toys or various feeding utensils, it must almost certainly be by the alimentary tract. If bacilli laden dust or droplets are inspired they are caught on the upper air passages from whence they are swallowed or carried to the lungs. We can safely conclude that intestinal infection is more common in infancy than in later years and he is prepared to believe that infection by the intestinal tract is more common in infants and children than infection through the lungs.

"THE MANAGEMENT AND TREATMENT OF TUBERCULOSIS IN INFANTS AND CHILDREN."—Dr. John Lovett Morse of Boston said that the general principles of management and treatment of tuberculosis in early life were, of course, the same as in later life. They had to be somewhat modified in their application because of the manner in which tuberculosis manifested itself in early life and because of the different ways in which children bore exposure and reacted to climatic conditions. The fatality of tuberculosis at this age was so great that little could be hoped from any form of treatment. In young children the tendency to localization was greater than in infancy. The bones and serous membranes were more frequently involved than the viscera. In older children pulmonary lesions were more common. At puberty the lesions, course and treatment of tuberculosis were essentially the same as in adults. Children were more rapidly enervated by warm, moist climates than adults. They were not, as a rule, robust enough to bear extremely cold climates, although there were exceptions. Great care must be taken in hardening them especially if they were young and delicate. It was, as a rule, easier to carry out proper treatment with children than with adults. It might be difficult to have them sleep out alone as they were apt to be afraid. Children accommodated themselves to institutional life much better than did adults. They did not worry and discipline was much easier than with adults. Experience with children suffering from surgical tuberculosis in the sanatoria abroad showed that, on the whole, they did better at the seashore than inland and better if the climate was temperate than if it was cold or warm. His experience at the Convalescent Home of the Childrens' Hospital in Boston showed that they might do well inland and in a cold climate. In order to effect a cure a stay of at least a year was necessary. Delicate, slender and neurotic children did better at any rate in the beginning inland in comparatively mild climates. It was important not to overdo exercise with these children. Children of the phlegmatic type did better at the seashore and in comparatively cold climates. They bore hardening well and could take a good deal of exercise. If kidney disease developed both classes did better in a warm dry climate. This country was far behind European countries in facilities for caring for these children. Very few children were being taken care of and these not long enough. As regarded treatment tubercular peritonitis was essentially a surgical form of tuberculosis. During childhood pulmonary tuberculosis was usually not a local disease but part of a more or less generalized tuberculosis. The prognosis of tuberculosis in early life was worse than in later life and much less was to be expected from climatic treatment. Children with pulmonary tuberculosis were generally less able to bear extreme cold than those with surgical tuberculosis. The disease was usually too far advanced when recognized to warrant sending them away from home. Milk and eggs were the most valuable articles of food, but much more skill was required in feeding young children than in feeding adults. The drug treatment of tuberculosis in childhood was purely tonic and symptomatic. The susceptibility to opium in any form at this age must be remembered. He had had no experience with tuberculin, but thought good results should be obtained with children as with adults if allowance were made for the greater severity of the disease and the greater tendency to dissemination. The children of tubercular parents should, if possible, be sent away from home. When they cannot be sent away from home everything possible should be done by regulation of their life and by guarding them against infection by the parents. Children suffering from latent tuberculosis or for any reason predisposed to it should be given proper climatic treatment or sent to sanatoria. If this was not possible every possible attention should be paid to their hygiene, food, rest and care. The great problem of the management of tuberculosis in childhood was to prevent its spread. It was easy enough to see what should be done but difficult to carry it out. All children in families where there is tuberculosis should be removed and sent to the country or seashore. The schools should be inspected once in six months and those affected with tuberculosis should be sent to sanatoria. Fresh-air schools should be established for the pre-tubercular, and proper provision should be made to provide them with extra food. Children suffering from latent tuberculosis should be sent to sanatoria separate from those for open tuberculosis. Those suffering from early open tuberculosis should be treated in camps or sanatoria. The matter was too large a one for private charities and must be taken up by municipalities and states.

Discussion of Papers.

Dr. David Bovaird, Jr. said that the mode of infection and the relation of bovine and human tuberculosis were questions upon the settlement of which a great deal depended. There were two schools; one claimed that 75 per cent. of the herds were infected with tuberculosis and that of these herds 23 per cent. would produce milk that contained tubercle bacilli, and that anyone drinking unsterilized milk from the average herd of cattle was in danger of developing tuberculosis. To this might be added the demonstration that tubercle bacilli introduced into the stomach and alimentary tract might first show the disease localized in the lymphatic glands and lymph nodes. The other school thought that the localization of lesions in man had a definite meaning; that wherever inoculated, in most cases, they got the primary lesion, or else a localization of tuberculosis in the next adjacent lymph nodes. Hence they claimed the right to infer by which route the individual was infected. This same school claimed to be able to show a relation between tuberculosis in cattle and the same disease in man. They pointed out that there was no record, not one instance, where men or children who had drunk of the milk of cattle known to be tuberculous, where they had been able to demonstrate a clear relation between such tuberculous milk and the slight outbreak of tuberculosis in those using it. It was impossible to review the evidence heaped up on each side and he took the stand of Theobald Smith on the question.

Dr. Henry Dwight Chapin said that the difficulties of making an early diagnosis were generally recognized by those who had studied tuberculosis in children. All clinicians looked to the results of laboratory study with the greatest hopefulness. There was one class of cases of tuberculosis in children which was not academic, in which lives could actually be saved, and that was tuberculous peritonitis. The difficulty of diagnosing these cases was very great, but the treatment was very hopeful. Dr. Chapin reported the case of a patient whom he had seen in consultation, who was supposed to have a chronic flatulent indigestion. In spite of the best of care and feeding the distension of the bowel continued. The patient was watched by a physician and a trained nurse and showed absolutely no temperature. The slight wasting was attributed to lack of proper nutrition. A surgeon called in, suspected chronic intussusception and a laparotomy was performed which revealed tubercular peritonitis. There was no temperature, no fluid present and the symptoms were very obscure. He hoped the laboratory would be able to help them in this type of cases. He thought this obscure form of tuberculosis might be more common than was supposed. He thought that milk borne tuberculosis was overestimated, though he had been unable to prove it from his own observation. The one point he fell back on was the fact that while tuberculosis in cattle seemed to be increasing, tuberculosis in man seemed to be decreasing. If bovine tuberculosis was of so much importance this would not be true.

Dr. Harlow Brooks said that so far as the anatomical lesions went in judging the point of infection, intestinal infection was rare, whereas respiratory infection was frequent. He agreed that anatomical lesions were not infallible as pointing out the point of infection. He had had considerable experience with animal experimentation. At one time he had a series of tubercular infections to deal with in the orang-outang and the chimpanzee. He found that all he could do to prevent infection was to prevent the dissemination by respiration. In these cases the intestinal factors were negative, but by preventing the possibility of infection by the respiratory tract the epidemic was wiped out, and he thought this could be done in order to prevent infections in children.

Dr. William P. Northrup said that the value of this discussion was to bring certain problems before them and the one that loomed up before him was that of bovine tuberculosis. In regard to the treatment of tuberculosis in children, he thought they were best treated before they got it. One way to harden children was to keep them from living in steam-heated apartments. The overheated apartments and houses were one of the most iniquitous things in New York. There was, too, an excessive variation in temperature; if one could not have continuous heat it was better to be always cold. One of the questions that was bound to arise in the pursuit of proper hygiene was how to obviate the excessive heating of houses which was responsible for much of the acute and catarrhal conditions of both children and adults. Cooling the houses would be one of the best ways of curing tuberculosis. The oesophagus and trachea were so close together that many children did not know better than to inhale what was regurgitated and to swallow what was brought up from the lungs. At autopsy he had observed, that at the bifurcation of the trachea there usually appeared that granular, chocolate, peculiar mass of almost cured tuberculosis. Dr. Northrup expressed himself as much surprised by Dr. McCrae's statement that tuberculosis in the brain was about one-fourth as frequent as meningeal involvement. His experience had been that very little tuberculosis occurred in the brain itself. He was surprised to find how it was limited to the meninges from which it reflected into the ventricles. He considered the Calmette reaction remarkable and a great aid.

Dr. Roland C. Freeman said that all who had made autopsies would feel as Dr. Northrup did, that the importance of the bronchial lymph nodes had not been sufficiently emphasized. In intestinal infection one would expect to find the mesenteric lymph nodes involved, but such was not the case as a rule. There was no evidence to show that the bovine tubercle bacillus would cause the disease in man. In intestinal infection one might get ulceration, and again one might get no ulceration at all. One might find the mesenteric lymph nodes affected microscopically. There might be an infection of mesenteric lymph nodes without other discoverable lesions. All these facts made one feel at autopsy that there were a great many cases that were apparently inspiration tuberculosis which were in reality cases of intestinal origin. He did not agree with Dr. Bovaird's statement that because a great many children drank the milk of tuberculous cows we might conclude that there was no danger from the milk of tuberculous cows. Many people lived in direct contact with tuberculous patients and never developed the disease. The milk of tuberculous cows often contained no tubercle bacilli.

Dr. A. F. Hess said that the ophthalmic test often failed when one was trying to make a diagnosis between tubercular and cerebrospinal meningitis. The tuberculin test often failed in advanced cases of miliary tuberculosis. It seemed to him that the only way to determine the question in regard to bovine and human tuberculosis was the slow and tedious method of differentiating the types of tubercle bacilli. It was well established that by means of morphology, cultural and biological tests the human and bovine types might be distinguished. This had been done in this country but to a greater extent in Germany and Great Britain. It was only by making such an investigation of hundreds of serial cases that they could come to any definite conclusion. He said serial cases because choosing a group of cases likely to have bovine tuberculosis had not the merit of giving an unprejudiced idea of incidence of tuberculosis in general. He thought this criticism was applicable to the report of the British Tuberculous Commission which had so greatly emphasized the importance of bovine transmission, as this body selected for examination a very large number of primary intestinal and mesenteric cases. It had been shown that primary tuberculosis of the lung was almost invariably caused by a bacillus of the human type. Of some 50 to 60 cases investigated there was only one where a bovine type of bacillus was isolated. Of 43 cases of bone and joint tuberculosis only one proved to be of bovine origin. One would rarely be in error if a case of tuberculosis of the hip, tuberculous osteomyelitis, etc., was looked upon as a case of human tubercular infection and one probably originating in the lungs and carried to the bone by the blood stream. In other forms of tuberculosis the results were by no means so uniform and did not lead thus far to any practical conclusions. In primary mesenteric and intestinal tuberculosis which was by no means synonymous with bovine tuberculosis, he had isolated and differentiated a human type of bacillus in three cases. Cervical tuberculosis might be incited by either variety of bacillus. The German report brought out the point that the bovine variety seemed to have a greater tendency to limit itself to the point of entry, in the case of cervical glands, mesenteric or intestinal tuberculosis. The fact should be borne in mind that the bovine bacilli had almost invariably been found in the organs of children.

Dr. A. Jacobi said in regard to "hardening" the child that Dr. Morse had been more cautious than Dr. Northrup had given him credit for being. One could not be too incautious in regard to this "hardening." He did not agree with Dr. Morse in regard to opium; opium was not a rank poison for babies, and when children or babies had tuberculosis opium might be given. Dr. McCrae had referred to the tonsils as not being to any great extent the road of infection for the tubercle bacilli. In the opinion of most people the tonsils were the port of entry of all sorts of infections. This was an exaggeration but it was certainly an important point of infection. The tubercle bacillus could get into the system through an intact mucous membrane. He related the case of a girl of 11 or 12 years whose case was diagnosed as Jacksonian epilepsy. She suddenly developed ascites and was tapped every few days. She had had epilepsy for years and had multiple adenomata of the liver and the swollen glands pressed upon the portal vein producing the ascites. No tuberculosis was noticed but the bacilli were found in the ascitic fluid. They must have passed through the intact mucous membrane. Dr. Jacobi said there was so much talk of pasteurization. This failed for the reason that it was not properly done either in the home or even by trained nurses in hospitals and he advocated bringing the milk to the boiling point.

SECTION OFFICERS: Chairman, Dr. Godfrey R. Pisek; Secretary, Dr. Eli Long.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Section on Pediatrics.

STATED MEETING, HELD DECEMBER 18, 1907, DR. ARCHIBALD D. SMITH IN THE CHAIR.

APPENDICITIS IN CHILDREN.—John E. Jennings, M. D.—Appendicitis in children differs in several important particulars from the disease as we are accustomed to see it in the adult. The onset is insidious, the progress treacherous, gangrene appears earlier, diffuse peritonitis is common, and the termination is often fatal.

Among the predisposing causes are previous attacks, digestive disturbances, foreign bodies, trauma, and some of the infectious diseases.

The pain usually begins suddenly, and at first it is apt to be diffuse. Rigidity often occurs on the left, as well as on the right side of the abdomen. Vomiting is an important symptom in the child. The temperature is generally high. In the great majority of cases the bowels are constipated, diarrhoea being seen only occasionally.

Examination is difficult at first, when the abdominal tenderness is diffuse. Later, when a tumor has formed, its detection is easy, by reason of the thin abdominal wall found in childhood.

In its differential diagnosis, appendicitis has been confused with acute indigestion, typhoid fever, pneumonia, intussusception, tubercular peritonitis, Pott's disease, tubercular disease of the hip, and purpura.

In acute indigestion there is no rigidity of the recti, nor is there a diminished abdominal respiratory movement. The leucocyte count is unchanged, and diarrhoea is generally prominent. Pneumonia is sometimes mistaken for appendicitis. For this reason, no physical examination in a case suspected of appendicitis is complete, without a careful examination of the right base. In pneumonia, the child is apt to be more restless, and the abdominal symptoms are, as a rule, more frankly right-sided. The diagnosis between intussusception and appendicitis should offer no difficulties, for the bloody stools and tenesmus of the former disease are never seen in appendicitis.

The treatment is operation as soon as the condition is made out; and this is more imperative in the child than in the adult. Opium should be used very sparingly, care being taken not to mask the development of symptoms which would aid in the diagnosis.

Discussion.

The discussion was opened by Dr. Westbrooke, who emphasized the value of early diagnosis and treatment. He had frequently seen appendicitis mistaken for hip-joint disease, and in these cases it had been his experience that a large abscess is usually found. When an abscess ruptures, a fatal termination follows very quickly. Any persistent case of indigestion or abdominal pain should be under suspicion. When one makes a diagnosis of appendicitis, operation should follow immediately. He had seen pleurisy, pneumonia, and typhoid fever mistaken for appendicitis. Typhoid fever he had seen of very acute onset in children. He did not place much weight on a history of trauma.

Early operation is indicated in children, because a rather large number of these cases will get into very serious condition without it.

He thought that appendicitis in infants was rather more frequent than is generally believed.

Dr. Ager mentioned the supposed relation between muco-membranous colitis and appendicitis.

Dr. A. D. Smith said that in his dispensary experience there had been, in three thousand cases of disease in general, six cases of appendicitis.

In closing the discussion, Dr. Jennings said that in his cases, none had been preceded by muco-membranous colitis. His figures were founded on 64 cases observed at the Brooklyn Hospital. Of these, 15 had general peritonitis at the time of the operation.

The Abdominal Belt Treatment of Pertussis.—T. W. Kilmer, New York City (Journal A. M. A., Nov. 23), reports the results from letters of inquiry in regard to the value of the abdominal belt in whooping cough, sent out to pediatrists in various parts of the United States, to which forty-five replies, covering over 550 cases, were received. The results are given in tabulated form and show 484 out of 556 patients improved (nearly 88 per cent.), and only 72 showing no improvement. Most of the replies were of interest on account of their testimony to the good effects of the belt in the prevention of vomiting. This was the chief benefit claimed by him, and he is pleased to have the support of these additional witnesses. A large number of cases with complications were reported in the answers, but he finds by further inquiry that in most cases these existed before the adoption of the belt treatment. Drugs were also used in many of the cases, but the effect of the belt on the vomiting was marked, independent of the medication. The apparatus is described and illustrated.—Am. Med. Compend., Dec., 1907.

The Significance of the Throat Affection in Cerebro-Spinal Meningitis.—WESTENHOEFFER (Med. Press, Sept. 4, 1907) is quoted as saying at the Hofeland Society, Berlin, that it was now generally recognized that in cerebro-spinal meningitis the tonsillar affection was the primary one. The disease might easily escape observation, as the inflammation was often situated in the upper part behind the velum palati and not on the tonsils themselves. The throat, therefore, should be examined in all suspicious cases. Pneumococcal and streptococcal meningitis originated in the nasal passages, but not the meningococcal nor the tuberculous forms of the disease. All attempts to eliminate the disease by means of gargles and douches for the nose and fauces proved unsuccessful, and even removal of the tonsils was not followed by any good results; in connection with the latter it must be noted that a large bleeding surface only made more room for the organisms to enter. The throat affection was present during the first days of the disease only as an intense redness and œdematous swelling, and disappeared very quickly. The germs entered with the respired air and settled on the first suitable spot, the infection being spread by means of expectorant material. In spite of the fact that 90 per cent. of these cases occurred in children the disease was not spread by them, as they did not expectorate. The source of infection was the sputum of infected adults. The epidemiological significance of the naso-pharyngeal affection lay in the fact that in all cases the meningococcus could be found in the naso-pharynx. Lumbar puncture was useful in some cases, but in others not. It only mitigated the symptoms. Meningococcus serum had been recommended in the acute stage, but the views were varied as to whether it should be used subcutaneously, or by the rectum or spinal canal. The last-mentioned method of procedure was the most likely to bring about a beneficial result. When the disease had advanced to the second stage, cerebral surgery was preferable to the injections of serum, and the author showed how by trephining in two places the descending cornu could be drained.—Brit. Jour. Chil. Dis., Oct., '07.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 156 Fifth Ave., New York.

Editorial Office: 742 Prospect Avenue, New York City.
Telephone 1032 Gramercy.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL.

SERUM THERAPY IN CEREBROSPINAL MENINGITIS.

It would seem that Flexner and Jobling have accomplished much with their serum in the treatment of this condition. Forty-seven cases of meningitis were treated, thirty-four recovered and thirteen died, four of the cases were hopeless from the start and died a few hours after injection, so that if these cases are not considered, the recoveries are 79.9 per cent., a much higher rate than cases treated by all other methods. The recovered cases had little or no permanent defect, many of them were well at the end of forty-eight hours.

Tobben reports almost equally good results.

The intradural method of injection was used as it brought the serum into direct contact with the active point of infection but enough observations have not been made to determine which method, the intradural or subcutaneous is preferable. Intravenous injections have caused serious symptoms.

The injections should be repeated every twenty-four hours for three or four days, and it is obvious that the earlier it is used the better.

This treatment seems to offer so much more than lumbar puncture, that a wider trial is warranted.

ABSTRACTS.

Alimentary Intoxication in Infants.—JOHN ZAHORSKY, M. D. (Jour. Missouri State Med. Assn., December, 1907), pleads for the recognition of the definite condition with a well defined symptom complex which he calls Alimentary Intoxication, the prompt recognition of which will save many lives.

He first quotes Finkelstein's statement that all forms of indigestion are only different stages of the same disease, 4 stages being recognized.

(1) Stage of stationary weight.

(2) Dyspeptic stage, characterized by stools containing undigested food.

(3) Putrefactive stage, characterized by foul offensive smelling stools.

(4) Alimentary Intoxication the subject of this paper.

When an infant is sick with indigestion he first loses tolerance to the quality or quantity of food. Tolerance to fats, then sugar is lost and finally all the ingredients of the food seem to act as irritants. Finally toxic symptoms arise which may carry off the patient.

The symptoms of Alimentary Intoxication are: (1) Impairment of consciousness; (2) singular changes in the type of respiration; (3) alimentary glycosuria; (4) fever; (5) collapse; (6) vomiting and diarrhoea; (7) albuminuria with casts; (8) loss of weight; (9) leucocytosis. The most common change in consciousness is known as the soporose form in which the infant lies quiet with eyes half closed, taking no interest in the surroundings, but usually easily roused. The eyes are sunken and the face has a distressed look. Sometimes there is extreme restlessness, delirium and convulsions. The respirations are regular but much deeper and more rapid than normal. This breathing even with very moderate temperature suggests alimentary intoxication. As a rule lactose, not glucose, is found in the urine.

Alimentary Intoxication is usually preceded by intestinal indigestion but it may be a complication of any disease often rapidly causing death. Sugars are particularly liable to cause it, and fats are a less frequent etiological factor. He emphasizes the fact that this condition by no means occurs during digestive diseases only, but in chronic atrophy and chronic indigestion it is the one complication to be most dreaded. Infants apparently healthy but fed on an irrational food especially if containing an excess of sugar sometimes develop it suddenly. It may occur in older children as well as infants.

As to the nature of the intoxication he believes it to be due to bacterial products in the intestines.

The treatment is most effective—the rapid improvement often corroborating the diagnosis. It is simply starvation and water. He allows barley water and rice water, well cooked, with no sugar and frequently speaks of weak tea as a stimulant. Of course he goes back to a proper diet as soon as the symptoms of intoxication disappear. He cites several interesting cases, one of which is appended below:

The infant was C. R., aged 6 months, who had been fed on the breast until he was four months old. Breast feeding was discontinued on account of a chronic nephritis of the mother. The infant was placed on condensed milk and did very well until two weeks before she consulted us at the Washington University Dispensary. The infant began to have diarrhoea, and rapid emaciation followed. During the last few days the infant had grown steadily worse. The condensed milk had not been discontinued entirely. The stools were grass green and contained much mucus.

The infant presented symptoms of collapse. The eyes were sunken and consciousness seemed to be greatly disturbed. The soporose condition was immediately noticeable. Another feature readily observed was the rapid and rather deep breathing. The pulse was rapid and feeble. The rectal temperature was 101 3-5 degrees.

The frequent green mucus stools and the absence of blood in the passages suggested that the little patient was suffering from follicular enteritis. The history of the disease corroborated the clinical diagnosis, but the symptoms of collapse and semicoma suggested a severe intoxication.

The infant was placed upon rice water and weak tea. Twenty-four hours later the clinical picture had changed entirely; the infant had improved in every way. The stupor had given way to a clearness of intellect. The deep breathing was replaced by a respiration almost normal. The rectal temperature was 99¼ degrees.

A specimen of urine obtained by the mother contained a substance which reduced the copper sulphate of Haines' and Purdy's solutions, but did not give the fermentation test. The urine contained considerable albumin and its sediment revealed numerous tube casts (epithelial, granular and hyaline).

Roger H. Dennett.

A Review of One Hundred Cases of Rachitis.—J. J. Thomas, M. D., and A. F. Furrer, M. D. (Cleveland Med. Jour., December, 1907).—These authors believe that this disease is frequently overlooked as 40% of the children between 6 months and 2 years have rachitis. They classified their 100 cases as follows:

Grade (a)	Advanced rachitis, includes	14%
Grade (b)	Moderate grade, includes	50%
Grade (c)	Slight grade, includes	36%

In the cases they saw the diagnosis had rarely been made by the physician previously in charge, the symptoms being attributed to "teething, worms, diarrhoea, nervousness, spasms," etc. The reason for the failure in diagnosis is, they point out that we are not on the lookout for it or are not in the habit of making a routine examination with the patient stripped.

The chief cause is faulty feeding and hygiene, most of the patients being artificially fed, except negroes and Italians who seem to be predisposed.

The chief symptoms and their relative frequency they tabulate as follows:

(1)	Rosary	98%
(2)	Enlarged epiphyses, wrists	90%
(3)	Enlarged frontal and parietal eminences	70%
(4)	Delayed dentition	60%
(5)	Prominent abdomen, "pot belly"	30%
(6)	Weak spine, kyphosis	20%
(7)	Deformation of chest	15%
(8)	Splenic enlargement	10%

Central nervous system: As evidenced by irritability, spasms, tetany, convulsions.

Muscular system: Flabby muscles, sometimes simulating paresis, the so-called pseudoparesis of rachitis.

Circulatory system: Chiefly mechanical difficulties, secondary to serious chest deformity; very rare.

Alimentary system: Gastro-intestinal indigestion is very common.

Respiratory system: Bronchitis or bronchopneumonia.

Prominent frontal and parietal eminences give the head an unusually square appearance, the anterior fontanelle is larger than normal and closes later and craniotabes is seen in some severe cases. Absence of or diminution of hair over the occipital region and head sweating are prominent symptoms. The lower jaw may be under developed or the chest may be deformed. In the severest cases, even in infants 8 months old bow-legs, knock-knees and anterior bowing of the long bones are often seen. In these cases the femur is also likely to be involved as well as the upper extremities and clavicles. Palpating the muscles will reveal their flaccidity. The large abdomen "pot belly" is not necessarily a sign of rachitis. Fat babies often have rickets.

They sum up as follows:

1. Forty per cent of the infants and children of the hospital class between the ages of six months and two years are rachitic.

2. The rosary, enlarged epiphyses of the wrists, prominent parietal and frontal eminences and delayed dentition are the four most constant symptoms.

3. About 80% of these cases may be termed slight or moderately advanced, and are therefore more likely to be overlooked.

4. Rachitis uncomplicated is a self-limited disease tending toward gradual recovery. Untreated, however, serious deformities of the bones may occur. The most commonly affected being the sternum, ribs, spine, long bones of the extremities and pelvis.

5. Bronchitis, bronchopneumonia, pertussis and gastro-intestinal disturbances, which are so common during the first two years and which are not ordinarily considered very serious in the normally developed healthy child, when engrafted upon a constitution already weakened by the malnutrition of rachitis, become important factors in the causation of the high mortality in infants and young children.

6. The diagnosis of rachitis may be made by inspection and palpation.

7. The treatment is practically wholly along dietetic and hygienic lines.

(a) It simply means a withdrawal of proprietary and other irrational foods and substituting a clean milk, properly modified, and divided in doses suitable to the age and weight of the child.

(b) Plenty of fresh air and sunshine. Body cleanliness.

(c) The administration of cod-liver oil, or other fats, and phosphorus.

Medication: Our routine prescription calls for:
Elixir phosphori ....20 (ʒ v.)
Ol. morrhuae, ad ....60 (℥ ii)
Sig. ½ teaspoonful after meals, thrice daily.

Roger H. Dennett.

Some Gastric Conditions in Wasted Infants. — Lancet Dec. 16, 1907. R. MILLER and W. H. WILLCOX make a plea for examining gastric contents in wasting infants. They refer particularly to results in atrophic dyspepsia anl hypertrophic pyloric stenosis and acid dyspepsia. The first group shows a diminished activity of both acid and ferment secreting glands. There is no retention of food in the stomach and there is no mucin. In the second class there is, as a rule, a marked increase in the ferment activity, together with excessive secretion of mucin. There is also found to be very obvious retention of food in the stomach. The total acidity is variable, but tends to be below normal, varying doubtless indirectly with the amount of gastritis present. It may be pointed out that after regular gastric lavage has been carried out for a short period the gastric contents begin to lose their abnormalities—the mucin becoming less in amount, the ferment activity diminishing, and the acidity at the same time more closely approaching the normal. In the third variety the gastric contents show an increase in their total acidity, the ferment activity being normal or below normal. There is no mucin, but there is obvious retention of food in the stomach. The clinical symptoms of the various conditions are fully described together with treatment.—Medical Record.

A Possible Explanation of Late Return Cases of Scarlet Fever.—British Med. Jour., Dec. 14, 1907. W. HABGOOD notes that every physician responsible for the discharge of scarlet fever patients from isolation hospitals is beset with the difficulty of knowing when they are free from infection. The time having not yet arrived when he can, as in the case of diphtheria, call in the aid of the bacteriologist, he has to be guided by ordinary clinical examination. Formerly desquamation was the guide; when that was completed the case was discharged. Of recent years it has been recognized that where return cases of scarlet fever occur the discharged patient will be found to have some purulent or muco-purulent discharge. While admitting the impossibility of being sure that all inflammation has ceased in the upper respiratory tract, the author is inclined to believe, from observation at different hospitals in the last two years, that cases are sent out free from any nasal discharge and not infectious, but do again become infectious by the occurrence of an ordinary attack of nasal catarrh, which causes some remaining quiescent scarlet fever germs to renew their activity. An analogy may be found in the case of one who sits in a warm room with a current of cold air playing on his neck. He may get an attack of acute nasal catarrh, and he may become infectious to others. The germs that caused the catarrh were already in his nose, but dormant and able to become active only when an interference with the nasal circulation was set up by the cold air driving on to the warm skin. Habgood thinks it may be argued that the scarlet fever convalescent causing a "return case" has in some instances left the house, not in an infectious state, but owing to the change from a healthy, open-air life and freely ventilated wards of a hospital to the stuffy and ill ventilated rooms of a cottage he has become more than usually liable to nasal catarrh—has, indeed, suffered from such an attack and is thereby again made capable of conveying scarlet fever infection.—Medical Record.

Tuberculosis of the Inner Genitals in Early Childhood.—HOHLFELD (Zentralbl. f. Gyn., No. 23, 1907) publishes an account of the post-mortem examination of two children where this condition was found, though it was associated in both with tuberculosis elsewhere. The first subject was a girl aged 3. Her father and infant brother had both died of tuberculous disease. She herself had been taken into hospital seven months before death on account of attacks of vomiting; tuberculous peritonitis and enteritis were correctly diagnosed. At the necropsy Hohlfeld detected advanced tuberculous disease of the cervical, bronchial, mediastinal, and mesenteric glands, and a few foci in the liver and in one lung. The intestines and peritoneum were much involved. The Fallopian tubes were thickened and bore prominent yellow swellings; miliary tubercle was detected not only in one ovary, but also in the muscularis and mucosa of the uterus. The second subject was a girl aged 1 year and 7 months, an only child of a mother who died in the puerperium and of a father said to be delicate. She herself had undergone a successful operation for tuberculous disease of the bones of the fingers and metacarpus, dying, after recovery, from an attack of double pneumonia. At the necropsy miliary tuberculosis of the spleen, liver, and peritoneum was discovered, as well as a caseous bronchial gland, and a tuberculous ulcer in the colon 8 inches below the ileo-cæcal valve. The uterus, as in the first case, was distinctly involved in the general disease, the endometrium being in a state of caseation, breaking down into the uterine cavity. The right ovary was converted into a tuberculous mass of the size of a hazel-nut.—The Medical Bulletin, December, 1907.

Treatment of Infantile Convulsions.— DR. WEIL (Journal de Medicine de Paris) advises using chloroform at the moment of the attack, when it does not come from indigestion. He uses the chloroform even in children two months old. From five to six drops are inhaled. The convulsions soon cease or grow less violent. These inhalations are continued at proper intervals until the crisis is passed. In order to avoid a return of the convulsions, Dr. Weil gives small doses of chloral or of the bromides. One can administer 0.03 grms. of the bromides to even new-born babies, or he uses it even in enemas. He even gives bromides to children of young age in doses of one to two grammes a day, without evil results, he claims.—Lancet-Clinic, Jan. 4, 1908.

Rheumatic Carditis in Childhood.— C. Coombs, (Bristol Medico-Chirurgical Jour., Sept., 1907.) The pathology of rheumatic carditis presents four salient points: First, it is a carditis. In four autopsies the endocardium and myocardium were inflamed in each instance, and the pericardium three times. Second, the rheumatic infection is blood-borne, and attacks the heart just as it would any other organ, by way of its own special nutritional blood-supply, in this instance the coronary arteries. Third, the gravity of rheumatic carditis in the earliest or "childhood" stage, lies mainly in the damage done to the muscle. Fourth, rheumatic carditis, like all rheumatic lesions, is remarkably apt to recur—or should it be said to recrudesce?

Perhaps the infective agent lies quiet in the cardiac tissues, awaiting opportunity to reassert itself; perhaps it is stored elsewhere in the body, and issues thence at intervals to infect the heart again. This way of regarding rheumatic heart disease, that is, as a carditis principally important in childhood by reason of the muscular lesions, is confirmed by clinical experience. The typical physical signs—outward displacement of apex beat, widened area of impulse, abnormally ready perception of the peristaltic nature of systole, increase of transverse cardiac dullness on both sides, the murmur of mitral incompetence, and the signs of raised pulmonary tension, indicated by tremendous accentuation of the pulmonic second sound, which is often doubled also—are all due to a dilatation of both ventricles.

In both endocardium and pericardium, the relation of the rheumatic infection may, for convenience sake, be divided into three stages: the acute, the recurrent, and the cicatricial. The object of the paper is to show that for the production of those signs which are found in the great majority of cases of rheumatic carditis in childhood, it is quite unnecessary to blame the valves or the pericardium; the myocardial changes which are always present are enough to account for everything.—Cyclopaedia of Practical Medicine, December, 1907.

Pneumococcus Peritonitis in Children.— (Archiv. f. Kinderheilkunde.) Dr. Van Rost, in writing on this subject, states that the onset is sudden, with violent abdominal pain, high fever, and vomiting. Watery, odorless stools are a less frequent symptom, and constipation was noted in one of the 3 cases reported by him. In 10 of the 68 cases on record the stools were normal or the children were constipated, and diarrhœa was noted in 41. Herpes labialis is an early sign of the affection. The encapsulated process sometimes breaks its way spontaneously through the umbilicus or vagina, but it is generally necessary to make an outlet for it. After the stormy onset the symptoms subside as the fluid accumulates in the abdomen. The pains may simulate appendicitis, but there is no rigidity of the abdominal wall. The spleen is not enlarged, the temperature is remittent, and there are bronchitic murmurs at first. During the second stage the encapsulated process may simulate tuberculous peritonitis. The prognosis of the encapsulated form is good, but general suppurative pneumococcus peritonitis proved fatal in 14 out of the 18 cases known, that is, in 77 per cent. Operative treatment should be delayed until there is distinct fluctuation, as the results have been almost invariably bad when the operation was done too early.

The Limited Value of Diphtheria Antitoxin as a Prophylactic. —Owen H. Peters, M. D., (British Med. Jour., October 5, 1907). This paper is a reaction against the wide use of antitoxin as a prophylactic and at the same time urges the isolation of all persons found by bacteriological examination to be harboring the Klebs Loeffler bacillus.

He reports two outbreaks, in one of which isolation and antitoxin were used and in the other isolation alone. In the former of 21 patients exposed and found to have the bacillus but with no obvious symptoms 7 had diphtheria within 3 weeks after receiving 500 units of antitoxin. In the other epidemic 20 were found to have the bacillus and were isolated, receiving no antitoxin. Of these only 3 subsequently had diphtheria. He suggests that the voluminous reports of the prophylactic efficacy of antitoxin are open to error. If the 2,000 children exposed in the school outbreaks just mentioned, had all received antitoxin instead of isolating only the "carriers" the sudden cessation of the epidemic which occurred would have been attributed to this measure. Furthermore it is well known that an individual may harbor the bacillus without developing the disease.

Since antitoxin is rapidly excreted in the urine there is a limit to the duration of the immunity conferred. Twenty-one days he believes to be the correct average time, therefore if exposure continues after that length of time the antitoxin should be again administered. He also speaks of the difference of individuals in their reaction to antitoxin.

When antitoxin is employed as a prophylactic measure it should not be for the purpose of stamping out the disease as the "carriers" are just as dangerous to the community with or without antitoxin. It should therefore be used only to guard the individual inoculated against the consequence of attack, and as we have such an efficient remedy in antitoxin there is practically no danger to the patient if the remedy is administered when the disease first declares itself.

Where swabbing and isolation under skilled observation can be applied prophylactic injections of serum may be dispensed with.

ROGER H. DENNETT.

Sero-Fibrinous Pleurisy in Infants and the Sign of the "Sou."—By DR. J. BRUDZINSKI (Archives de Medicine des Enfants, September, 1907). In this paper, which deals with the relative frequency of purulent and serous pleural effusions in infants, much space is devoted to the description of a new physical sign called the "Signe du Sou." This sign is elicited in the following manner:—Over the suspected part of the thorax a "sou" is placed, and gently tapped with another, while the physician auscultates at a corresponding level on the opposite side, and appreciates the sound as it is conducted through the thorax. Thus, if one suspects a pleurisy at the right apex in front it is over this one percusses with the coins, and it is over the right apex behind that one auscultates. In examining axillary conditions one auscultates on the same side of the chest and at the same level, but close to the vertebral column, in order to bring as great a thickness of lung as is possible between the point percussed and the point auscultated. The author advises the idle ear of the observer to be closed with the finger so as to make the differences in note more apparent. He also says it is advisable to compare the notes obtained at different levels. In the case of normal lung the note is dull and entirely devoid of all metallic tinkle, but if there is an effusion the note has a distinct metallic tone, and if much fluid be present it is almost silvery in its character. In the case of pulmonary consolidation, on the other hand, the note is even more dull than that found on examining normal lung.

This sign, the author considers, at least in children (adults are not mentioned), pathognomonic of pleural effusion, and more reliable even than exploratory puncture, which, though having the special qualification of differentiating between purulent and serous effusions, may, as is well known, often miss an encysted pleurisy. With the aid of this sign he has in many instances been enabled to detect pleural effusions in the axillary region, and has verified his diagnosis by exploratory puncture.

It is as a result of the use of this sign and exploratory puncture in a large series of cases that he doubts the truth of the general opinion that in children purulent effusions are commoner than serous.—Glasgow Med. Jour., Jan., 1908.

Continuous Generalized Spasms and Acute Encephalitis of Infants.— La Riforma Medica. ORAZIO D'ALLOCCO describes acute encephalitis in infants as a malady that is generally met with in the chronic stage of paralysis owing to the quickness with which the acute symptoms pass and the obscurity of the symptoms. The disease comes on as a general infection, with fever and symptoms of brain irritation. A continuous, uniform, rhythmical clonic spasm comes on. The limbs are flexed and head extended. This condition is soon followed by paralysis without spastic condition. Electric excitability is increased, and there are no trophic disturbances. There is a stimulation of the central convolutions and central lobules of the one or both hemispheres. As long as the stimulation goes on the spasm continues, but when it is over paralysis supervenes. The condition may be of traumatic origin, or a true infective malady. The single autopsy obtained by the author showed that there was an occlusion of the blood-vessels, for the most part venous, sometimes produced by true embolism and followed by acute inflammation or degeneration. The condition is analogous to anterior poliomyelitis. Most of the cases observed by the author were in rachitic babies and in the winter and spring. In the child, the babe, and the fetus, the causes of encephalitis are not the same as in the adult. The venous system is more developed than the arterial; thrombosis of trunks and secondary branches is frequent and does not destroy life.—Medical Record, January 4, 1908.

Rumination in a Girl, aged 3 Years.—DR. J. COMBY (Archives de Medicine des Enfants, July, 1907). The child, whose parents were neurotic but did not suffer from merycism, was born at full time, and enjoyed good health until the age of 1 year, when she contracted whooping-cough complicated with gastro-enteritis. Later she suffered from constipation alternating with attacks of muco-membranous colitis. It was only about three months prior to her coming under observation that she was first noticed to bring back her food into the mouth. This occurred invariably a few minutes after finishing a meal, and was unaccompanied by any effort or pain. The food, after further mastication, was swallowed again, and in the case of dessert and dainties with evident pleasure. She was encouraged by her mother to spit the food out, but this she refused to do. This rumination would last for about two hours, during which time there was emitted from her mouth a disagreeable sour odour. The child was constantly in a state of hunger. Her general health was, however, good.—Glasgow Med. Jour., Jan., 1908.

On Radiography in Pneumonia in the Infant. By M. M. Weill and M. Lucien Thevenot (Archives de Medicine des Enfants, July, 1907.) It was in 1899, when MM. Variot and Chicitot reported the results of examination of twelve cases, that attention was first drawn to this subject. These authors showed that by this means, at least in the case of adults, the information as regards seat, extent and disappearance of the lesion was more exact than by ordinary physical signs. Its usefulness the present authors consider even greater in the case of children, in whom the diagnosis of lobar pneumonia is often difficult, owing to the absence of definite physical signs.

The present paper is based on a study of thirty-eight cases which have been grouped into four classes.

Group I comprises twenty-four cases, in all of which physical signs and radiographs gave corresponding results. As a rule, the intensity of the shadow varies *pari passu* with the physical signs, but in some cases the shadow on the fluorescent screen persisted for from two to thirty-seven days after disappearance of physical signs. Again, in the case of central pneumonia, a shadow will substantiate the diagnosis some time before the consolidation has extended to the surface and been revealed by ordinary physical signs.

In Group II is a single case, never revealed by radiograph, yet accompanied by the usual signs and symptoms.

Group III contains two cases with doubtful physical signs, but with characteristic symptoms. Both gave very distinct shadows indicative of consolidation.

In Group IV are nine cases, seven of which were doubtful from the clinical point of view. There was, as a rule, some slight fever of from two to four days' duration, with signs of bronchitis (subcrepitant rale and faint tubular respiratory murmur), but no defective movement of chest, nor dullness to percussion. In another case there was, in addition to the above signs, dullness to percussion and defective movement, which were only present for one day. In his remaining case, the illness lasted for five days, with a temperature ranging between 102.2° and 104°, pain in the side, and cough. Some fine rale and faint tubular respiratory murmur were audible over the painful side, but there was neither dullness nor defective movement. A herpetic eruption was present on one eyelid. In not one of these nine cases was there the slightest shadow present.

The following are the author's conclusions:

"1. 'Frank pneumonias' with fibrinous exudate give almost always distinct, though perhaps tardy, physical signs, and a sharply delimited shadow with the *x*-rays."

"2. Those affections which do not give any shadow, but which are, however, usually clinically considered pneumonia, should be classified apart. They are most frequently examples of broncho-pneumonia or simple congestive attacks."

"3. The central type of pneumonia is exceedingly rare, and one should only classify as such those cases devoid of physical signs, but showing undoubted shadows from the beginning."—Glasgow Med. Jour., Jan., 1908.

Surgical Treatment of Cervical Adenitis.—J. P. Webster, M. D. (Lancet-Clinic, Nov. 9, '07) says that the object is to remove a possible source of infection more rapidly than nature would without the unsightly scars of the latter. That a marked improvement of the general health follows the removal of the infected glands. There are two methods of surgical intervention, incision and curetting, the advantages of the former are its extended application, the removal of the gland entire and the small risk of disseminating tubercle; its disadvantages are its difficulty, danger of wounding important vessels and nerves, length of operation and unsightly scars if wound becomes infected.

The advantages of curetting are that it can be used for glands not tubercular and in softening tubercular glands, a small incision, a small scar, its disadvantages, uncertainty of cure, its limitation, danger of disseminating tubercle and that all deep-lying glands cannot be removed. Tubercular meningitis has quickly developed after curetting.

The technic for a radical operation is as follows:

"Make a free incision along the selected line, through the skin, platysma and fascia, avoiding division of the superficial nerves when possibie. If the operation is to be radical, expose the free border of sternomastoid and hold it aside with retractors or pass a strip of gauze around it and give it into the care of an assistant. Expose the capsule of the gland, turn them out with the handle of a scalpel, dissector, or dissect out with a sharp knife, keeping the cutting edge toward the gland. If adherent, attack from the point where they are the least adherent and work from this point. Dissect out, rather than tear out, keeping close to the capsule. Avoid rupturing, if possible, as a consequent infection may result.

"In case rupture does occur, apply H_2O_2 freely, flushing it off with normal saline solution. Relax and examine all constricting bands before dividing, as they may contain vessels or nerves. When in doubt, divide between forceps. Isolate all torn vessels, and tie above and below the rent with catgut. 'Keep close to the capsule of the gland. Make no cut in the dark. Beware of cutting tissues which are only seen when put fully on the stretch.' The entrance of air into the veins can be avoided if all bands are divided between forceps. The admonition to 'go slow and know where you are at,' applies with greater force here than in almost any other operation in the surgical field.

"The spinal accessory nerve is only exposed in operations of the upper part of the posterior triangle, and can be readily recognized by pinching the parts with a forceps where the nerve is supposed to be; the muscles will contract under this irritation.

CLOSURE OF THE WOUND.

"Use unirritating stitches. I prefer horse-hair, except at the angle or points of greatest tension, where a few fine silkworm-gut stitches should be placed. Coapt the edges very carefully. In short straight cuts the subcuticular stitch may be employed with good cosmetic effect. Seal the edges with a light dressing of flexible collodion and cotton. Apply thick pads of cotton gauze and apply a roller pressure bandage. Provide rubber tissue drainage from the most dependent points of the incision."

A. JACKSON.

Modern Surgery of the Faucial Tonsil.—At the recent meeting of the American L., R. and O. Society, DR. THOMAS J. GALLAGHER read a paper on this subject. He first discusses the anatomy of the tonsillar region and in speaking of the crypts he draws attention to the direction which the three channels take in the superior portion of the gland. Owing to their extending downward and outward drainage is materially interfered with, and extending as they do to the external surface of the capsule, it is quite necessary to remove all the superior part of the tonsil, in order to prevent peritonsillar abscess. The capsule is the fibrous membrane covering the external portion of the tonsil and is loosely attached to the superior constrictor. The arteries supplying the tonsil are the dorsalis linguæ from the lingual, the ascending palatine and tonsillar from the facial, the ascending pharyngeal from the external carotid, the descending palatine branch of the internal maxillary and a twig from the small meningeal. Normally the internal carotid artery lies behind and to the outer side of the tonsil nearly an inch distance from it in the posterior portion of the pharyngomaxillary interspace. Gallagher thinks the tonsillotome will soon pass out of use and the complete extirpation of the sinus tonsillaris will be the operation of election. He pleads for the complete removal of all tonsillar tissue if any at all be removed. In his operations Gallagher pulls the tonsil well towards the middle line and then with various knives he frees it from its attachments, when it is finally removed with a Coes snare. The tonsils are usually removed with capsule intact.—Canada Lancet, Dec., 1907.

The Albuminuria of the Newly-Born.—GUNDOBIN (Arch. of Kinderheilk., 46, p. 267) finds that the presence of albumin in the urine of the newly-born can under no circumstances be considered a normal phenomena. Inasmuch as the investigators have in most cases found only traces of albumin, which disappeared very early, we ought in reality not to speak of albuminuria of the newly-born. To explain the appearance of this albumin, it will not suffice to study the question in relation to the nutrition of the child and nutritional disturbances. It is also necessary to study the diseases of the fetus, concerning which, we have as yet very hazy notions.—Interstate Medical Journal.

Peritonitis Due to Salpingitis in Children.— Recognizing the fact that a rapidly fatal peritonitis was associated in young girls with salpingitis, Riedel (Archiv f. klin. Chirurg., Bd. lxxxi) examined the histories of his appendicitis operations and found that out of forty-eight girls under ten years of age who had been operated upon for suspected appendicitis, in eight the peritonitis had originated in the Fallopian tubes. In females over ten there were only six instances of salpingitis in 348 cases. Salpingitis peritonitis is a very rapid and fatal affection. The infection extends from the uterus, but it is not certain how this is brought about. In the author's cases staphylococci and streptococci only and no gonococci were found; there was, moreover, no suspicion of abuse in any of the cases. The diagnosis from appendicitis is impossible, and an immediate operation is the only chance of saving life. There is an acute onset with high temperature, abdominal pain and distension, and malaise; later cyanosis and rapid wasting ensue. Examination of the abdomen reveals nothing distinctive, but on opening it the intestines are found to be covered with a fibrinous or purulent exudation. Pus is present in one of the Fallopian tubes, but the fimbria is free and the tube but slightly enlarged. The uterus is red and congested as a rule, though externally it appears normal. The bad prognosis of this condition should lead to a word of warning to the patient's friends before operating for suspected appenditicis in young girls.—Brit. Jour., Chil. Dis., Oct. '07.

An Unexpected Cause of Spasmodic Torticollis in Young Children.— Strazza (Il Morgagni, June 29, 1907, through Journal de médicine de Paris) calls attention to a cause of spasmodic torticollis, which would, ordinarily, often escape observation. In a child, eight years of age, he observed a torticollis on the right side, caused by a spasmodic contraction of the sternocleidomastoid, which attended an acute otitis media of the corresponding ear. The torticollis increased and decreased at the same time with changes of condition in the auricular and ganglionic manifestations. In another girl, who was affected for ten years with stenosis of the Eustachian tube, adenoids of the vault, and hyperplasia of the tonsils, with associated septic infection of the sub-maxillary ganglion, there was also observed a spasmodic contraction of the sternocleidomastoid. After treatment of the pharynx, by removal of the adenoids, the disposition to torticollis disappeared. The spasmodic condition was evidently due to the irritation, which the cervical polyadenitis exerted upon the nerve trunk (motor branch of the spinal accessory), which innervates the sternomastoid. This polyadenitis, caused by the vulnerability of the mucous membrane of the throat of children, would explain the frequency among them of torticollis. In fact, this cause should be considered, and excluded from the diagnosis before regarding the condition as rheumatic. The absence of pain in these two cases was probably due to the nonexistence of neuritis.—N. Y. Med. Jour., Nov. 9, 1907.

Wine Whey.—The preparation and value of this food are thus described by Myers and Still in the London Lancet, as reported in The Therapeutic Gazette, August, 1907.

The method of preparation which, after experiment, the authors fixed upon as the most satisfactory, is this: Ten ounces of milk was heated until just boiling, then two and a half ounces of cooking sherry was added and heat was applied again until the mixture began actually to "boil up," when it was removed from the fire and allowed to stand three minutes; the curd was then strained off through a two-fold layer of butter muslin. The alcohol in this whey was estimated by the usual method of distillation and determination of the specific gravity in the distillate. A cooking sherry, costing 1s. per bottle, contained 14 per cent. of alcohol by weight; whey made therewith (using two and a half ounces as described) contained 2.28 per cent. of alcohol by weight. The dilution of the sherry by the milk in this case would have made the proportion of alcohol 2.8 per cent.; in this case, therefore, 0.52 per cent. of alcohol was lost in the preparation of the whey.

For clinical purposes brandy is a convenient standard of comparison in considering the alcoholic value of this food. An average brandy contains 42.5 per cent. of alcohol by weight, so that if sherry whey be reckoned as containing 2.3 per cent. of alcohol by weight, it is approximately one-eighteenth (strictly 1-18.4) of the strength of brandy, and one ounce of sherry whey is, therefore, so far as alcohol is concerned equivalent to 25.8 minims of brandy. In the use of sherry whey, therefore, it must be remembered that it is a food which contains a considerable quantity of alcohol.

The conditions in which this food is suitable for an infant are those in which only small quantities of food can be tolerated, and where a stimulant is necessary. Where there has been much vomiting, with or without diarrhœa, and the infant has already been fed for some hours with albumin water or veal broth in small quantities, sherry whey often makes a useful step toward the return to milk feeding; sometimes, indeed, in the acute stage, where there is still much vomiting, a drachm, or a few drachms, of this food will be retained in the stomach when other foods have been tried in vain. In cases which, owing to difficulty of milk digestion there has been chronic vomiting and the infant has become feeble and exhausted, feeding for two or three days on small feeds of sherry whey alone, and then on alternate feeds of sherry whey and fully peptonized milk, is sometimes of great benefit. In the common cases in which food after food has been tried and the infant has become emaciated and screams with flatulence and colic after meals, sherry whey sometimes has a striking effect in reducing the flatulence and colic, and so relieving the child's distress; in such cases it may be given at alternate feeds for several days and then two or three times a day. The authors have seen excellent results from it also in the case of premature or very feeble newly born infants.

The quantity of sherry whey which can be given is decided chiefly by the proportion of alcohol which it contains. It is not intended for prolonged use, but the authors have often used it as the only food, for a week or ten days, and when it is given at alternate feeds only, it can be continued if necessary for two or three weeks. To an infant six weeks old a tablespoonful can be given every half-hour or every three-quarters of an hour, and the amount and interval gradually increased until two ounces are taken every two hours. The quantity, however, as a rule, is determined less by the age of the infant than by the general condition and the degree of tolerance shown by the stomach. At any period of infancy it is seldom desirable to exceed from two to two and a half ounces of sherry whey at a feed; but in exceptional cases the writers have given as much as three ounces every three hours to infants about six months old, and even four ounces every three hours to an infant twelve months old, for two or three days with great benefit. As a general rule, it should certainly be laid down that sherry whey, like any other fluid which contains alcohol, should never be given to infants in larger quantity or continued for a longer period than the exigencies of the case require.—Annals of Gyn. & Ped., Oct., 1907.

THE COUGHS FOLLOWING GRIP.

Dr. John McCarty (Louisville Medical College), in giving his personal experience with this condition, writes as follows: "Ten years ago I had the grip severely and every winter until 1902, my cough was almost intolerable. During January, 1902, I procured a supply of Antikamnia & Codeine Tablets and began taking them for my cough, which had distressed me all winter, and as they gave me prompt relief, I continued taking them with good results. Last fall I again ordered a supply of Antikamnia & Codeine Tablets and I have taken them regularly all winter and have coughed but very little. I take one tablet every three or four hours and one on retiring. They not only stop the cough, but make expectoration easy and satisfactory. The best results are obtained by allowing the tablet to dissolve slowly in the mouth before swallowing."

SAL HEPATICA The original effervescing Saline Laxative and Uric Acid Solvent. A combination of the Tonic, Alterative and Laxative Salts similar to the celebrated Bitter Waters of Europe, fortified by addition of Lithia and Sodium Phosphate. It stimulates liver, tones intestinal glands, purifies alimentary tract, improves digestion, assimilation and metabolism. Especially valuable in rheumatism, gout, bilious attacks, constipation. Most efficient in eliminating toxic products from intestinal tract or blood, and correcting vicious or impaired functions.

Write for free samples.

BRISTOL-MYERS CO.
Brooklyn - New York.

PRIVATE School Home in quiet village. Cases of arrested development considered. Outdoor life. Special treatment for physical defects. Number of pupils limited. Experienced teachers. Individual instruction a specialty. Pupils received at any time. References to prominent physicians. Address P. O. Box 93, Worthington, Ohio.

PEDIATRICS

Vol. XX MARCH, 1908 No. 3

ORIGINAL ARTICLES

INFLUENZA AND ITS TREATMENT.*

By Thomas J. Dunn, M. D.

Out of the far East in June, '89, came the greatest and most widespread epidemic of influenza that has ever afflicted the human race. Spreading slowly at first, later with great rapidity, following the lines of travel in its favorite direction westward and northward it reached the United States in December and continuing on its course completely encircled the globe in 18 months. Other pandemics there had been in the centuries before but owing to the slower methods of communication then prevailing and the lesser amount of travel and traffic, none ever approached this last and greatest, either in the rapidity of its spread or the extent of its distribution.

Almost annually since that epoch-making year, we have had greater or lesser visitations of this well-named world pestilence. During these recent years all the resources of modern scientific medicine have been brought to bear on the subject; the enormous literature of today shows how thoroughly its epidemiology, its etiology and its clinical manifestations have been studied; so that there is now little or nothing new to set down in its history.

---

*Read at the Symposium on Influenza at the Medical Society of the Borough of the Bronx, Feb. 12, 1908.

We all accept the doctrine of its contagious nature, of its transmission from person to person and of its dissemination through human intercourse.

The bacillus discovered by Pfeiffer in '92 is practically regarded as the specific and exclusive causative agent which, being air borne to a certain degree enters the system through the respiratory tract: starting in the upper air passages it shows in its clinical features the same disposition to rapid and wide distribution as it does in its character of epidemic. No organ or tissue in the human economy is safe from its ravages—and this gives rise to such a widely diverse symptomatology, to so many types that it is called by all writers the most Protean in its manifestations of all diseases.

It would aid very much to a clear conception of the disease and its many ramifications, to grant that in every case it finds its first resting place and later point of departure in the nose and naso-pharynx. Here associated with other germs, strotococci, pneumococci, and giving rise either to severe symptoms of intoxication or hardly any at all it may elect to invade the accessory sinuses or travel to the middle ear and mastoid—continuing along these lines the brain and meninges may be the final point of attack. With the inflammatory changes, meningitis, encephaliitis, caused by the influenza bacillus and its associated germs and the functional and peripheral-nerve changes caused by the toxins elaborated by the micro-organisms we have the picture of the so-called nervous type of the disease. After the respiratory type this is the most frequently observed form of the disease,—the statement that "the influenza toxins are intense nervous poisons" has been confirmed beyond all doubt.

The most numerous and most important local inflammations of influenza occur along the line of the respiratory apparatus from the nose to the air cell; the respiratory type. The laryngitis and bronchitis alone have no special significance. The tracheal involvement, especially at its bifurcation, is regarded by some as the cause of the severe paroxysmal convulsive cough which is such a common feature. This cough is mentioned by all the writers and the older chroniclers designated it by the same name "coqueluche" which later was applied to whooping cough. A recent case that I observed up to the autopsy makes me believe that enlarged bronchial glands may have a great deal to do with its production. "Pneumonia is the most frequent and most important complication of influenza. It is the delusive factor in influencing the morality of the disease." This dictum of one of the great writers on the disease corresponds with the judgment of all observers and is proven by the largely increased death rate from pneumonia in all great epidemics of influenza.

These pneumonias may assume all forms but are often characterized by certain atypical features. Whether catarrhal or croupous they frequently begin in the lobule or part of a lobe: they have a creeping character. They are frequently bilateral or become bilateral. The initial chill is often absent as the pneumonia develops during the course of the other disease. The sputum is more purulent and less rusty. The temperature curve is not typical, being more remittent corresponding to the progression of the disease. There is marked tendency to cardiac weakness. Resolution frequently is slow and by lysis rather than crisis. There is a tendency to severe pleural involvement going on to serous and purulent effusion. The frequent termination of influenza pneumonia in abscess formation and gangrene is a fact well substantiated by statistics. This generally atypical course can be easily understood when we reflect that these pneumonias are usually due to a mixed infection and that pneumococcus, streptococcus and influenza bacilli all may play a part.

A marked characteristic of influenza is to convert latent disease into active disease. A mild cardiac affection or a slight albuminuria may be thus converted into a very grave condition. But more especially do we see this tendency in tuberculosis. Tubercular patients seem peculiarly susceptible to influenza and advanced disease does not confer immunity. Latent or cured cases become active and afford new soil for the development of new patches. Pneumonia in these cases is usually very intense. Accompanied by hemoptysis and at times ending in phthisis florida—or it may be associated with abdominal symptoms, great prostration and the typhoid state.

I saw some interesting examples of this condition of which I will describe one as a type. A young well built Italian entered Fordham Hospital suffering from an intense pneumonia. Temp. 105½; P. 120; R. 40. In a few days there was a partial crisis and a prompt rise again with an extention of the pneumonic process. At the same time marked tympanitis developed with diarrhoea and stools that resembled those of typhoid. The temperature chart was that of typhoid. A typhoid condition supervened with delirium. Sordes and brown dry tongue. Repeated Widal tests were negative and repeated examination of sputum showed no tubercle. About the middle of January there was a decided reaction to the Calmette test lasting three days and two days later tubercle in the sputum. The subsequent history of the case proves it to be tuberculosis.

Two other cases of pneumonia at the same time—with the same symptoms, gave strong family histories of tuberculosis. These two were fatal and unfortunately autopsy was refused.

I believe that the bronchial glands—inflamed and enlarged play a part in influenza which has been little recognized. There is very little reference to them in the literature. It is recorded that Zehn of Geneva found the bronchial glands swollen at the post-mortem examination. Anders says they may be noted and detected by percussion. The condition simulates an on-coming pneumonia—a rapid rise in temperature lasting a few days, an irritating cough without expectoration, dullness and tenderness on percussion along the upper dorsal vertebrae with the physical signs of the lung due to partial pressure on a bronchus completes the picture of this condition.

Cardiac symptoms are very common and of great importance and while they do not constitute a type in themselves they may enter into any case of influenza as a serious complication.

The heart may be affected in various ways but two varieties are especially common—the influenza toxins may affect the cardiac muscle or more especially the nervous apparatus—or we may have an inflammatory endocarditis or pericarditis which is usually due to inflammatory processes in the lungs and pleura and is the result of infection with streptococci. The symptoms resulting from these conditions are a weak pulse out of proportion to the amount of fever: Bradycardia is more common than in any other acute infectious disease; a change in rhythm is often seen—and at times angina which persists through convalescence. Alarming attacks of heart weakness are often seen and numerous deaths are ascribed to cardiac paralysis. In those that recover there may persist for a long period serious functional disturbance of the heart—shown by palpitation and shortness of breath on the slightest exertion.

The third great type of influenza, the gastro-intestinal or abdominal occurs much less frequently than either of the other two. It is characterized by inflammation of the gastro-intestinal mucous membrane with vomiting and diarrhoea. Its occurrence can be accounted for on the assumption of a pre-existing inflammation of the naso-pharynx with few symptoms but with a free secretion, which is carried by the act of swallowing into the stomach. Our common experience with cases of nasal diphtheria proves conclusively that dangerous infection of the naso-pharynx can exist without giving rise to pronounced symptoms of infection.

There is nothing special to characterize this gastro-intestinal type from any other similar inflammation due to other causes. When of a severe type especially if associated with the nervous type with prolonged fever it may simulate typhoid fever very closely and is called the typhoid form of influenza—a severe enteritis may be complicated by a fibrinous peritonitis.

Occasionally the inflammation extends to the gall bladder or appendix. This latter is not an uncommon complication.

About one year ago during a mild epidemic of influenza in an institution one patient, aged about 14 years, had the mild catarrhal symptoms of the disease in common with the other cases. A few days later there was a rapid rise in temperature—dullness and marked tenderness on percussion to the right of the 4th dorsal vertebra and broncho-vesicular breathing at the upper part of the right lung. I looked for pneumonia for the next two or three days but it did not eventuate. Instead the temperature dropped and these symptoms subsided to be followed shortly by a sudden attack of vomiting—profound collapse and marked tenderness in the region of the gall bladder. The picture of the case was suggestive of a sudden perforation. The temperature ran a high curse for weeks simulating that of typhoid. The pulse was persistingly rapid and remained so for weeks and months after convalescence was established. Prostration was marked throughout the attack which lasted in all about two months. This case exemplified in one individual all the types except the nervous which influenza can assume. It shows at the same time the ease and the difficulty of diagnosis. Taken singly it would be hard to account for the chest symptoms or the abdominal condition. But with the history of contagion—the existence of several cases in one building—and the preliminary naso-pharyngeal symptoms the diagnosis offered no difficulty.

The treatment can be summarized briefly. To prevent the disease, drugs are of no use. Isolation whenever possible should be practised especially in institutions. Disinfection of the catarrhal discharges from the nose, pharynx and bronchi is essential. Thorough ventilation of the sick room should always be insisted upon. A painful personal experience showed me how infectious and virulent is the air of a closed room which harbors an influenza patient. In simple cases I contend with a simple procedure—rest in bed, restricted diet and a thorough irrigation of the nose and naso-pharynx with a pint of a mild antiseptic solution using just enough pressure to carry the fluid around. An elevation of a few inches, 6-8, will secure this. This practise is followed by a prompt fall in temperature and marked comfort to the patient and I repeat it often enough to maintain this result. I believe it prevents the extention of the disease to distant parts. Of drugs, phenacetine, quinine and salol are the favorites; sometimes Dover's opwder or coedine are added. I believe in small doses frequently repeated.

Laryngitis, tracheitis and bronchitis are treated in the usual way.

In pneumonia we have two different conditions to meet. Broncho pneumonia and croupous pneumonia—both conditions require an abundance of fresh air—but broncho pneumonia needs a supporting and stimulating treatment, strychnine and whiskey and a careful attention to nutritious diet are proper from the beginning. In fact almost the same line of treatment as would apply to a case of tuberculosis of the same degree is to be carried out in broncho pneumonia. Of the drugs that I have used in this condition I like creasotol best of all.

A different plan of treatment is called for in lobar pneumonia—stimulation is to be used only when the pulse calls for it, as it lasts only for a few days while the other variety may last weeks, a supporting line of treatment is not so essential in the beginning—but rather measures to control toxaemia—hyper pyrexia—persistent vomiting. Many drugs have been tried quinine—salicylates—digitalis—creasotol and all have their advocates. My favorite treatment for the condition is arsenic in massive doses and so far I am gratified with my results. I have used it in a very large number of cases in the past two years and I have not yet experienced anything which would make me wish to abandon it.

For the cardiac conditions which we encounter in influenza—strychnine is the drug par excellence. For the grave conditions large doses—which should be diminished as improvement occurs.

For the abdominal conditions the ordinary symptomatic treatment suffices.

Gall bladder complications and appendicitis are to be handled according to the well known principle laid down for such cases.

In conclusion bearing in mind that in all cases simple or complicated, prostration, nervous and muscular, is a pronounced symptom, we must never resort to depressing measures but always support the patient to the utmost and have early recourse to thorough and complete simulation.

Diphtheritic Fever.—(Dublin Jour. of Med. Science, Jan.) J. Moore gives a further communication on an outbreak in a girls' school of sore throat, bacteriologically proved due to a form of Klebs-Loeffler bacillus, the resulting illness, however, failing to present the typical features of classical diphtheria. The points emphasized are the consensus of opinion of the meeting on the previous occasion to which the communication was made that the Klebs-Loeffler bacillus not infrequently produces a masked or larval form of diphtheritic sore throat, apt to be overlooked from the failure of the classical symptoms; the need for a bacteriological examination, even in mild sore throat; and the persistence of the infection of diphtheria, even in these mild cases. Moore reproduces and tabulates the history of the epidemic and draws attention to two instructive sequels: 1. The diphtheria was carried home to the country in two instances by the girls nearly two months after their illness. 2. Nearly twelve months later a little epidemic of a precisely similar nature occurred in the school. In this, out of three cases the milder form of the diphtheria bacillus was present in two, but was not to be detected in the third, the clinically most severe case. A similar case was that of the superintendent of St. Patrick's Nurses' Home. Her attack was first considered as neuralgic or rheumatic, but right facial paralysis with slight paralysis in the legs suggested its true character. Moore describes the clinical syndrome of this "diphtheritic fever" as follows: A more or less severe coryza; a moderate tonsillitis, usually one-sided, and unattended by high fever or by much exudation; thickly coated tongue and foul breath, the tongue desquamating as in scarlatina; a patchy or punctate rash on the roof of the mouth and buccal mucous membrane; swelling of the cervical lymphatic glands; a roseolar rash on the skin (in 12 out of 18 cases—in 4 cases early in the attack, in 8 cases on the fifth to the seventh day from the first symptoms or invasion); distinct desquamation (in 3 cases), the peeling being particularly marked on the hands.—Jour. A. M. A., Feb. 22, 1908.

INFLUENZA IN CHILDREN.*

By A. F. Brugman, M. D.,

CLINICAL PROF. DISEASES OF CHILDREN FORDHAM UNIV., VISITING
PHYSICIAN FORDHAM HOSPITAL, ASST. PEDIATRIST
VAN DER BILT CLINIC.

Mr. President and Gentlemen:—

Influenza in children is as a rule a much milder disease than when it occurs in adults.

During the great pandemics of 1890-1891 children, especially the very young ones, and infants were almost exempt; but during the past few years, when the disease is epidemic during the early winter months more and more cases have been noted among children. Those at the breast are seldom attacked even though other members of the family may have the disease.

With bottle-fed children it is otherwise, as they seem to be quite susceptible to the infection.

We are able to divide the cases seen in two great classes:—Firstly, those in which the disease affects mainly the upper respiratory tract; and secondly, those in which the lower respiratory passages are mainly involved.

---

*Read at the Symposium on Influenza at the Medical Society of the Borough of the Bronx, Feb. 12, 1908.

The first set of cases generally presents symptoms of conjunctivitis, acute rhinopharyngitis with a serous or sero-purulent discharge from the nostrils causing often an excoriation of the upper lip, the pharynx is reddened and the tonsils red and swollen. There may be swelling of the glands at the angles of the lower jaw. The temperature may rise to 101° or 104°. The patient is irritable, cross and restless, probably due to pains in the limbs of which the older children complain.

The cases often resemble measles, and especially during epidemics of the latter, as is at present the case, it is difficult to differentiate the two until Koplik spots are found.

The second set of cases is more severe; they may have some of the symptoms of the preceding set, but commence more abruptly, often with vomiting, chill, high temperature 103°-106°, rapid pulse and breathing, flushed face, and harsh, dry almost croupy cough due to the involvement of the larynx.

Some of these patients look as if they were getting pneumonia.

On examination we may find nothing but slight dullness and diminished breathing mainly at the base of one or both lungs.

After a few days, sometimes a week, these cases may go on to recovery without any further trouble; but in quite a number of cases lobar pneumonia does develop and runs its regular course but with a continuous high fever, marked prostration and often symptoms resembling meningitis.

In several cases I have seen, the disease has commenced with the symptoms of the first set of cases and after four or five days there has been a sudden elevation of temperature with all the signs above enumerated. After the inflammatory symptoms have subsided there has been another rise of temperature and I have found another lobe of the same or opposite lung involved. Resolution was delayed and these children were weak for a long time.

Instead of lobar pneumonia we may find a capillary bronchitis or broncho-pneumonia developing, especially in children under three years of age or those who were in previous poor health or had been afflicted with the rickets.

These cases are not much different from ordinary capillary bronchitis or broncho-pneumonia excepting that the fever is higher, prostration more marked and the convalescence tedious.

Besides these sets of cases we have some in which the gastro-enteric symptoms are marked and apparently overshadow those of the respiratory tract. These cases are found usually in bottle-fed children or in older children who have been improperly fed or where free catharsis in the beginning of the disease was omitted.

Complications: Among the complications as already mentioned we have both lobar and broncho-pneumonia, no doubt due to the vulnerability of the mucus membranes to the pneumococcus caused by the influenza bacillus. Bronchitis in varying degrees may also be present.

In those cases where the upper air passages are much involved, the influenza bacillus may gain entry through the Eustachian tubes to the middle ear and cause a serous or purulent otitis media and possibly infect the mastoid cells.

Occasionally we find an urticarial or erythematous eruption resembling measles or scarlatina.

In some cases nephritis with small amount of albumen and blood cells has been found.

Even after the acute symptoms have subsided we find our patients weak, and very anaemic. I have found the last symptom very marked in cases seen during the present epidemic. They require a number of weeks to regain their strength. Their digestions are easily upset and careful dieting is necessary.

Cases have been recorded where the disease has attacked young infants producing a profound toxaemia, with only a moderate elevation of temperature but extreme prostration, sometimes convulsions, disturbance of digestion and death in a few days without any physical signs in the lungs or elsewhere to account for the profound symptoms presented.

Prognosis: As a rule, good in children previously healthy, few have more than a mild attack. In the poorly nourished, however, and especially in those who have or have had the rickets, the prognosis is not so good, as they readily develop ear, lung, or glandular complications and they die from one of these.

Treatment: As the disease is very contagious we must avoid bringing the little ones in proximity with those suffering from influenza. Every child should have its own handkerchief. Even babies should not have their little noses wiped with a handkerchief belonging to another child or adult.

Plenty of fresh air, day and night will tend to diminish the chances of infection. After the morning bath cold sponging of the face, neck and chest will harden children and render them less susceptible to this disease.

Apartments occupied by influenza patients should be fumigated after recovery.

A child suffering from influenza should be given a warm saline irrigation of the colon, a warm bath and put to bed. If necessary small doses of calomel followed by castor oil.

If very restless a grain of phenacetin or aspirin may be given.

Tinct. of aconite in small doses with spirits of nitrous ether and liq. ammonia acetatus is useful to lower the temperature and acts as a diaphoretic.

For the naso-pharyngitis a diluted Dobell's or Seiler's solution or the ordinary physiological salt solution.

These solutions may be followed by one containing adrenalin 1-10000 and boric acid 1%.

In older children quinine or euquinine may be given.

For the cough which persists later cod liver oil and creosotal. unless it is very troublesome and prevents a child from sleeping: then codeia gr. 1-50 will suffice.

For cough which persists later cod liver oil and creosotal.

For the prostration, strych. gr. 1-100 in syr. of chocolate three times daily.

For the anaemia iron in some organic form, also oxygen in form of fresh air.

The complications must be treated as they arise.

There are still some patients who do not recover until they have a change of residence if only to some other house or to some warmer climate. The diet should be light and easily digestible. In bottle-fed children, milk should be eliminated for a day or two, and barley-water and egg-water substituted.

220 West 139th St., New York.

SOME REMARKS ON THE EAR IN INFLUENZA.*

By John B. Rae, M. B., C. M.,

AURAL SURGEON, RIVERSIDE HOSPITAL.

The ear complications of influenza differ in degree rather than in kind from those met in other acute infectious diseases, and are mostly to be classed with regard to their severity and liability to the deeper and more dangerous sequelae, with the malignant types observed in scarlet fever, measles and the combination of scarlet fever and diphtheria. It may, however, be stated at this point that early operative interference seems, in the opinion of the writer, to promise more for the future of the affected ear in the influenza cases than in others. In other words an equally rapid destruction of the drum membrane, and an equally rapid involvement of bone ossicles and tympanic walls, are not to be observed. Nevertheless it must be insisted that the ear complications of influenza are of a destructive character and that their early diagnosis and rational treatment are of the utmost importance.

The ear complications in influenza affect the receptive mechanism or are limited to the conductive mechanism. You will remember that the ear is regarded clinically as consisting of two divisions, the conducting mechanism and the receptive mechanism. By the conducting mechanism we understand all the parts concerned in the conduction and modification of the sound waves until their entrance into the labyrinth. Under this term therefore are included the external and middle ears, the drum membrane, the ossicular chain, the tube and the cellular structures of the mastoid process. The receptive mechanism refers to the different centres in the brain, to the auditory nerve and to its distribution within the labyrinth.

---

*Read at the Symposium on Influenza at the Medical Society of the Borough of the Bronx, Feb. 12, 1908.

Should the disease be non-purulent and the evidence point to a lesion in the receptive mechanism, the labyrinthine changes are secondary to the middle ear changes, or we have to deal with a neuritis of the auditory nerve. On the other hand the labyrinth may be involved by direct extension of a purulent process in the middle ear, with a resulting panotitis. In either condition the diagnosis and treatment must be in the hands of the otologist, and further reference to them here is unnecesary.

The commonest and therefore most important complications are confined to the conducting mechanism and begin with the acutely inflamed middle ear. From that as a starting point may develop mastoiditis, thrombosis of the sigmoid sinus, thrombosis of the internal jugular vein, circumscribed pachymeningitis, epidural abscess, diffuse purulent lepto-meningitis, or brain abscess.

The symptoms of the acute otitis media are urgent from an early stage in the disease. The first feelings of "stuffiness" accompanied by distressing tinnitus are quickly forgotten and cease to be complained of, on the onset of intense pain. This is felt deep in the ear, is worse at night and almost invariably, absolutely prevents sleep. Temperature is elevated, although the significance of this may be lost on account of the pre-existing fever of the influenza. Within the ear itself, active hyperaemia is rapidly followed by serous effusion. The mucous lining shares in the inflammatory changes, is edematous and infiltrated with round cells. On inspection with speculum we find a membrane uniformly reddened, the landmarks lost in the swelling and the drumhead bulging into the canal. It is not uncommon to find that the intensity of the inflammation is such, that a large bleb, containing either blood or serum, is projecting from the surface of the drum into the lumen of the canal. This may sometimes be mistaken for the drum itself and if this error is not guarded against, incision of the bulla instead of the membrane may be performed.

With such a picture presenting, immediate and free incision is indicated.

The question of abortion of the acute otitis media must very rightly be considered when the disease comes under observation in the early stage. There seems to be no reason to doubt that a certain number will abort, although by no means so large a proportion as in the so-called simple catarrhal cases. The means at our command to bring about abortion include rest in bed, saline catharsis, restriction of diet, application of dry heat and local depletion by means of leeches. Two leeches may be used in front of the tragus, one at the level of the superior canal wall and the other at the level of the inferior. Leeches must *never be applied over the mastoid.* The judicious use of narcotics in this early stage is good practice, but their continuance over a period long enough to mask symptoms must be carefully guarded against.

Abortion only should be attempted in the stage of hyperaemia. The presence of effusion, either serous or purulent within the tympanum, is an absolute indication for more radical measures.

Whatever be the immediate exciting cause of the acute otitis of influenza, smears or preferably cultures, will demonstrate, at least in the great majority of cases, a streptococcic infection. This does not necessarily mean that the specific influenza bacillus was not in the first place responsible for the middle ear disease, but only that in the secondary infection which rapidly follows, the streptococcus predominates.

It does not seem expedient in the course of these rather desultory remarks, limited as they are to ten minutes, to enter at any length into the question of treatment. The writer will therefore but briefly indicate the course of treatment in order to leave time for other matter which has, perhaps less often been a subject of discussion before this society.

Hope of abortion having been abandoned, immediate incision of the drum membrane should be practised. This is a brief but extremely painful operation, and is preferably performed under general anaesthesia. The incision should be free and the knife should be carried deep enough to deplete the inflamed mucous membrane on the inner tympanic wall. The further treatment is either wet or dry. By the dry method, a wick of sterile gauze is carried up to the opening in the drum head, and the discharges received in a large outer dressing retained in place by a bandage. It is hardly necessary to point out that this method can only be employed by one possessing the necessary training and skill. The wet method is that by irrigation. A hard rubber piston syringe with a capacity of two ounces, and any suitable fluid, sterile water, normal salt solution, bichloride solution or boric acid solution, are the necessary implements. Irrigations should be made at intervals short enough to keep the canal clean and should be diminished in frequency as the amount of discharge lessens. It is of the utmost importance that the strictest precautions with regard to cleanliness be observed, not only before performing myringotomy, but also throughout the period of irrigation.

When the acute symptoms have sufficiently subsided, our efforts should be equally directed to procuring cessation of discharge and restoration of function of the affected ear. The latter object is accomplished by systematic inflation of the middle ear, preferably by means of the Eustachian catheter.

Should such a course be followed as has been here outlined, a large proportion of our influenza ear cases will terminate favorably, both with regard to cure of the purulent process and with regard to restoration of hearing. Nevertheless it must not be forgotten, that even where the further possible complications do not present, a chronic purulent otitis may persist in spite of our best endeavors, or the hearing power will but slowly return, or may even be permanently impaired to a greater or less degree. It therefore behooves us to be somewhat guarded in our prognosis in these uncertain and frequently unsatisfactory cases.

The onset of involvement of the mastoid, which is the first most likely extension of the otitis, is marked by certain symptoms. Where all the evidences of mastoiditis are present the diagnosis cannot be in doubt, but it happens only too frequently, that the picture is by no means typical, and the diagnostic and operative indications may have to be observed with the closest scrutiny if a favorable outcome is to be obtained.

In every case we must rely on the findings as a whole and not on the so-called pathognomonic symptoms, for experience has shown that even where these signs are absent or by no means urgent, the necessity of operative interference may be very immediate. It may perhaps be best to consider first the course of a typical case, and then briefly to consider the variations of the most important symptoms. There is no general carriage and appearance of the patient which can be dignified by the name of the mastoid facies. The patient looks sick and is often liable to carry the head stiffly as if afraid of any jarring movement. Temperature runs from 100° F. down to normal. The tongue is coated and the bowels constipated. The pulse is in proportion to the degree of temperature found. Inspection discloses a varying amount of purulent discharge, a more or less perfect or imperfect drainage from the middle ear, and frequently although by no means invariably, a sagging or prolapse of the postero-superior canal wall. Deep seated tenderness on pressure can usually be elicited over the site of the mastoid antrum in the first place, later over the tip, and over the whole mastoid area when the bone is sufficiently cellular and the disease has been allowed to extend without interference. The patient meantime complains of pain behind the ear, at first localized to the temporal bone but later extending and referred to the whole side of the head. This pain as in the case of the original acute otitis usually disturbs or prevents sleep.

When such a train of symptoms appear in the course of an influenza otitis, our efforts should be earnestly directed to the abortion of the mastoiditis. The patient should be put to bed if not already there. Should drainage from the middle ear be insufficient, free incision is urgently indicated, followed by hot irrigations at close intervals. The bowels should be freely moved by a saline cathartic and the diet restricted to fluids. Local applications of cold over the mastoid have fallen into disuse, but there is no doubt in the mind of the writer but that the steady application of cold in the form of the Leiter coil, or of the Sprague aural ice-bag for 36 to 48 hours, is of great benefit in controlling the local inflammation. The ice-bag should be absolutely discontinued after that period, not only because its usefulness is confined to the early stage, but also as is widely known and generally admitted, because of its liability to mask the more urgent symptoms, and so increase the risk of the patient by inadvisable delay.

Bacteriological examination of the discharge and a differential blood count may be of considerable importance in deciding for or against operative interference, but the writer would urge, because these aids are but too often indecisive, if not actually misleading, that our main reliance must be placed on the clinical picture as a whole, and our decision reached on the clinical evidence, where its weight seems to overbalance that of the laboratory.

Persistence of all these symptoms after 48 hours should call for immediate operative interference. It is, however, almost the invariable rule to find a more or less marked amelioration of the conditions consequent upon this rational treatment, and it may become the duty of the physician to advise operation in spite of, and in face of this marked general improvement. The writer regrets that lack of time alone prevents him from enlarging upon certain aspects of the variations of symptoms and physical signs to which brief allusion will now be made.

Tenderness on pressure is rightly considered one of the most valuable evidences of mastoid involvement. Little is to be found in the literature as to the exact causation of this symptom. It must, however be due to direct compression of the inflamed osseous tissue. It cannot be due to periostitis, because a normal periosteum is encountered, on operation, where this tenderness was a marked symptom. It cannot be due to periostitis, because were it so, it would be elicited, as it is where periostitis is present, on a *slight* pressure and over the whole mastoid area. Why then should this valuable symptom be on some occasions absent, or so little in evidence as to cast doubt on the diagnosis? Experience on operation provides us with several answers. An abnormally hard and thick cortex such as is frequently found will explain many of these cases. In addition, the sigmoid sinus is often found, on operation, to so occupy the space of the mastoid process and so closely to impinge upon the posterior canal wall, as to render it physically impossible that there be room for cells. Here the tenderness to be elicited on pressure must necessarily be limited.

Further, the mastoid process may be diploic in character, and conform to the structure of the other cranial bones. Here the only cell to be found is the antrum and lack of tenderness may thus find its explanation.

Lastly, although this does not specially refer to the mastoiditis of influenza, the acute condition may be an exacerbation or fresh infection of an old process. In such a case the mastoid has been the seat of a prolonged condensing osteitis, in the course of which the original cells have become obliterated and the whole structure converted into a mass of ivory consistence, with only one cell, the mastoid antrum presenting, and that considerably reduced in size. It should here be noted that in these old standing cases, and in those in which we find the sigmoid sinus occupying an abnormally anterior position, there is an apparent liability that the purulent process will not find an outlet through the mastoid cortex, but that the perforation is likely to be into the sinus groove setting up phlebitis and thrombosis of the contained vein.

Temperature, in mastoiditis is usually low—varying from around 100° F. to normal. *Persistence* of a slight degree of temperature may however, with or even without other significant features, be the deciding point in favor of operation.

Diminution or cessation of discharge is rather characteristic of the onset of mastoiditis. On the other hand the amount of discharge may be so great as to prove conclusively that the middle ear alone cannot be its source and so decide operation.

Post-auricular oedema is a late symptom of mastoiditis in the adult, and it is safe to say that this evidence should never be waited for in cases under observation from the early stages. In infants and young children, swelling behind the ear—either simple oedema or a sub-periosteal abscess, develops at an early stage. It is perhaps hardly necessary to point out that the presence of a sub-periosteal mastoid abscess calls urgently for complete evisceration and that no less radical method will suffice.

Enough has been said with reference to a few of the symptoms, at least to indicate the reasoning by which one remains on guard in the absence or want of significance of these symptoms. It will readily occur to all how each in turn might be similarly handled.

Many of our grip cases are included in this doubtfully operative category and when we add to the existing difficulties the fact that a patient rapidly acquires and exhibits a certain tolerance of his mastoiditis, and wilfully or unwittingly, deceives himself and the physician as to the amount of his tenderness, it will be granted that the greatest care should be taken in deciding for or against operation. The writer is convinced that many of these influenza mastoids, which have for one reason or another escaped operation, provide us later with our sinus and meningitis and brain abscess cases. The conservative position and in the opinion of the writer the only tenable position to hold, is that safety lies in early operation, and not in delay.

The indications of involvement of the sinus are in the first place those of phlebitis with evidences of septic intoxication and later, pronounced symptoms of pyaemia. The temperature changes are therefore ever our best guide. With a more or less marked rigor—or even without it, the temperature suddenly rises to 104° or even higher. This is quickly followed by an almost equally rapid fall and the patient sweats profusely. Should the thrombus be extended into the internal jugular vein, symptoms may be detected in the neck. These are sometimes directly traceable to the vein but more frequently in the experience of the writer, to the accompanying lymphadenitis and peri-adenitis.

The fundus of the eye should be examined and a differential blood count made. If considered necessary exclusion of malaria should also be made by the blood examination.

The operative procedure consists in exploration of the sinus, removal of the septic clot, and resection of the internal jugular vein below the limit of the infected thrombus.

The time limit will allow mere mention of two other complications. Diffuse purulent lepto-meningitis of otitic origin is rightly regarded as one of the gravest complications. The diagnosis may be aided by withdrawal of cerebro-spinal fluid by lumbar puncture. Operative interference does not in the meantime offer much, but there does seem some prospect in view of recently recorded cases, that our views as to the prognosis in this condition, may undergo considerable modification.

Otitic brain abscess has as a rule few if any localising symptoms. We know by experience that extension through the tympanic or aural roof is the most common route of invasion giving rise to a collection of pus in the tempero-sphenoidal lobe. The next most common route of infection is backward into the cerebellum. Incision and drainage constitute the treatment.

616 Madison Avenue.

"NOSE AND THROAT CONDITIONS IN INFLUENZA."*

By Charles Graef, M. D.,

OCULIST AND AURIST TO FORDHAM HOSPITAL, CLINICAL PROFESSOR OF OPTHALMOLOGY, FORDHAM MEDICAL COLLEGE.

Many of the cases, probably a majority, either begin with *coryza* or have this as a factor to deal with during the attack.

The coryza of influenza is commonly, too, a more severe one than that accompanying other infectious diseases, and these patients are liable to develop in the nose and its accessory cavities infections, which, in variety and severity, are not approached by those following any other acute disease unless it be *scarlet fever,* or an occasional severe type of *diphtheria.* These stand, in this respect in a class by themselves; the comparison being still further borne out by the later effects of these troubles,—the depressing effects of their poisons both locally and generally.

Examination of the nose and throat in the early stages of an attack of influenza, frequently shows only congestion of the membranes, usually of a pronounced red color, but varying in intensity with the severity of the case, and depending to some extent on the previous condition of the parts. Occasionally the congestion is accompanied by haemorrhagic spots. The discomfort complained of by the patient is very often quite out of proportion to what one would anticipate from the appearance of the parts.

---

*Read at the Symposium on Influenza at the Medical Society of the Borough of the Bronx, Feb. 12, 1908.

Many of these patients complain of a thick, stuffy feeling in the nose, and careful examination with a probe reveals in some of them a marked, thickened and leathery tone in the mucosa of the turbinals. This is probably due to an exudate poured into these tissues as a result of the severity of the toxins of this disease. It is likely that the nose is the chief avenue by which infection reaches the organism in grippe cases, and it is possible that the long-continued depression, the inability to secure refreshing sleep, and to regain former mental activity and a power of concentration complained of by a percentage of patients who have suffered from influenza, the condition to which the term *"aprosexia"* is applied, may be in part due to such an exudate into the nasal tissues.

These membranes are in close touch with the intra-cranial contents through their lymph circulations, and it is worth remembering that the nose is an important part of one of the only two body organs of which unceasing activity is demanded. Defective function here can hardly fail to make an impression on the well-being of the individual.

The virulence of the infective agents in grippe cases rapidly brings on an over-active stage of secretion, and then pus formation, after the period of primary congestion, and in the nasal accessory sinuses whose drainage is imperfect such a sequence of events is particularly prone to occur. The frontal sinuses often give early evidence of infection; the headaches in this region, so much complained of, being due in many cases to swelling of the membrane lining these cavities. They are well situated for drainage purposes however, and are therefore more likely to purge themselves of infective material, and less inclined to lasting, purulent disease than some of the other cavities draining into the nose.

The ethmoid cells are probably involved in every well-marked case of influenza, and in the antrum of Highmore we most often have to deal with a continued infection.

Much of the headache and neuralgic pain suffered by grippe patients is due to disease in these unyielding bony cavities, especially in the cases where such pains are persistent. If the drainage from the sinuses is interfered with by intra-nasal faults such as hypertrophies, deflections, spurs, etc., these symptoms are more likely to be lasting.

Localizing signs are noted in some cases but by no means in all. The pain and face ache caused by disease in the antrum of Highmore is often referred to the teeth. At times the soft tissues of the cheek over this cavity become swollen and tender to the touch. More often there is nothing more than a feeling of discomfort in the diseased antrum, and an excessive amount of discharge from the corresponding side of the nose. Abundant discharge from the nose, especially if unilateral, should always suggest sinus disease. It is practically a pathognomonic sign if it follows such an infective condition as grippe.

Disease in the frontal sinus is also characterized by pain and tenderness over the bony walls of this cavity. Headache with pain about the eye, and tenderness most evident to pressure at the upper, inner angle of the orbit, but which may often be elicited over the frontal eminence on palpation and percussion indicates disease in the frontal sinus.

Patients who complain of a feeling of tightness between the eyes, and head pains radiating upwards from the upper part of the nose, usually owe it to an infection of the ethmoid cells with swelling, and pressure of the middle turbinal bodies on the upper, sensitive part of the nasal septum. In all these cases it is common for the patient to suffer most from headache on rising, and in the early hours of the day. Later on, often as the patient declares, from about two o'clock, the pain and misery disappear and the evening hours may be fairly comfortable.

Little can be done with medicines for such patients, and in this fact lies a fairly good indication of the presence of such lesions.

Cleansing of these sinuses with washing through a suitable canula, and in some of them, operative treatment to improve drainage, is of prime importance.

In the throat the effects of the influenza infection are mostly limited to the congestion already noted. The sharp red color of this congestion is a feature and it is generally pretty uniform from the pharynx downwards by the time it comes under observation. Haemorrhagic spots are not infrequent and blood stained sputum may be hawked up in consequence. The sputum is usually of a tenacious consistency and of a greenish-yellow color almost characteristic of influenza.

In some cases aphonia and cough are early and pronounced symptoms, the larynx seemingly suffering the earliest effects.

Sharp attacks of tonsillitis at times usher in an attack of grippe, especially in persons who have unhealthy tonsil tissue in the throat, and in occasional cases localized collections of pus forming a peri-tonsillitis or quinsy will be met with.

The troublesome cough that often keeps up after the acute stage of influenza is passed, is due to persistent congestion of the larynx or trachea, and is best treated by sedatives and rest.

In a general way the comfort of a patient suffering from grippe in the acute stage, can be best improved, so far as the nose and throat are concerned, by suitable sprays or inhalations.

Perhaps the best spray is a mixture of adrenalin chloride solution with normal saline to make a 1 to 8000 dilution. Cocaine even in weak solution had better never be given these patients for such use. If there is much discharge the nose may be washed at suitable intervals with normal saline solution or Dobell's mixture.

Oily sprays are found comforting by many influenza patients, a mixture of terebene in albolene gr. 30 to the ounce, serving as well as any for this purpose. The oil of eucalyptus was looked on as a very valuable agent in dealing with influenza at one time, regarded almost as a specific in England in fact. It may be used with liquid paraffin or albolene, 20 grains to the ounce in a similar way.

For inhalation these same drugs serve well. Twenty grains of each should be ordered dispensed with 10 grains of light carbonate of magnesia to the ounce of water; this quantity is put into a quart of boiling water, the steam being inhaled by the patient. A dram of compound tincture of benzoin may also be added if desired.

Some patients find much comfort in the use of a snuff which helps dry the secretion and clear the head. Here again cocaine may be added, but is likewise dangerous to give to the patient who may form a habit through such use. I usually order some such combination as this:

Menthol	gr. 3
Morph. sulph.	gr. 4
Bismuth sub nit.	
Pulv. amyli. and pulv. acacia	aaʒss

1076 Boston Road, New York.

The Cuti-reaction to Tuberculin in Infants.— (Presse Médicale, September, 1907, No. 78, p. 617) Ferraud and J. Lemaire publish the results of their investigations on 100 children, with histological drawings. Ninety-eight per cent. of the subjects were under fifteen years of age. The histological characteristics were distinct: a dermic œdema, often considerable, and an inflammatory reaction consisting of small round cells. It is clinically and anatomically markedly different from what is observed after simple scarification, scarification with glycerine, phenolised or sublimated glycerine, vaccine and diphtheria toxine. It is clinically and anatomically the same in pronounced tuberculosus patients and in those apparently free from it. This uniformity of aspect is explainable by the presence, in the subjects who were supposed to be non-tuberculous, of a tuberculosis not discoverable by ordinary means. The results were in twenty-nine out of forty-nine cases confirmed by the ophthalmo-reaction, and in thirty-four out of thirty-nine cases by the subcutaneous injection of tuberculin. This parallelism between the results obtained by the injection of tuberculin and by the cuti-reaction is remarkable and deserves close study. When positive this reaction reveals in a unique manner the tuberculosis of the subject. When negative it acquires, on the other hand a significance of application more immediate. Being much more practicable than subcutaneous injection, it may be substituted for it.—Brit. Jour. Children's Diseases, Jan., 1908.

ACQUIRED SYPHILIS IN CHILDREN.

By Charles A. Kinch, M. D.,

NEW YORK.

VISITING DEMATOLOGIST TO THE NEW YORK CITY CHILDREN'S HOSPITALS AND SCHOOLS; CLINICAL ASSISTANT TO THE NEW YORK SKIN AND CANCER HOSPITAL.

Syphilis is no longer considered a "shameful disease." It may indeed be acquired in a shameful way, and it is the terrible penalty of lapses from virtue in one-fourth of venereal cases. It is not true that that the great pox is different from the small pox; that diphtheria, variola and typhoid fever fall upon their victims unawares, but syphilis has to be sought for. There are many ways in which this dreadful disease may be spread other than by sexual intercourse. The secretions of mucous patches in the mouth and of pustular lesions on the skin may carry the contagion. Inoculation with syphilitic blood will convey the disease. It has become so prevalent that it deserves to be classed among the communicable diseases. The importance of reporting and registering syphilitic patients with the Board of Health has been seriously considered. It is estimated that there are 200,000 syphilitics in the city of New York; 150,000 in Berlin, and an equal number in Paris.

Syphilis does not stop at the present generation. It destroys the life of the unborn and brings the unripe ovum to an untimely birth. It taints the blood of little children and covers their bodies with disgusting sores. It fills their mouths with mucous patches from which innocent friends may be infected with renewed virulence. It destroys the small bones of the face, and deforms the long bones with exostosis. It causes degenerative changes in the lungs, liver and spleen. It predisposes to tuberculosis, otitis, and meningitis. It may even extend its malevolent influence to the third generation.

One-half of one per cent. of those afflicted with syphilis are children. There are about one thousand syphilitic children in this town. It is thought that four-fifths of them have inherited the disease, and one-fifth have acquired it. If syphilis be a penalty of vice, a badge of impurity, what shall we say for the latter class? Is it possible that 200 of our babies have been the victims of assault or shameful practices? Perish the thought!

Wherein lurks the danger of syphilis? What are the contagious lesions? For, like diphtheria and small pox, it is not conveyed except by the actual transfer of the materies morbi from one person to another. Fournier places first of all the mucous patch. It is by the mucous patch in the mouth that the child of syphilitic inheritance infects its hired wet nurse. It is by the mucous patch in the mouth that kisses are poisoned. The venom lies in the respectful salutation as well as in the kiss of passion. It is by the mucous patch in the mouth that handkerchiefs, towels and drinking cups become the media of contagion. It is not necessary that the sore be in the anterior of the mouth. Tonsillar and palatal lesions infect the whole saliva. The mucous patch is but a papule modified by its environment. Papules in the natal and vulvar folds and under the prepuce take on a mucous character. Young women have been infected on the forearm through carrying diseased infants on their bare arms. If the surface of a papule be removed with a curette, the serum that exudes will be crowded with spirochetae pallidae. If the layer of pus and granular tissue be removed from a mucous patch, spirochitis will likewise be found in abundance.

Much less frequently but with equal virulence, the chancre becomes the source of contagion. It is by the chancre that the unfaithful husband infects his innocent wife. It is by the chancre on the breast that the wet nurse infects her own child. It is by the chancre in the mouth that the disease is spread in the intimacies of family life. Here as with the mucous patch, the initial lesion is equally contagious in any part of the mouth, through the saliva. The receiver may also develop his chancre upon the tonsil or the side of the tongue instead of the lips, as would be expected.

Syphilis may also be conveyed by the blood, the contents of the vaccine vesicle and the secretions from pustular lesions.

The writer will append the notes of a few cases of acquired syphilis by the courtesy of his friends.

CASE I. The youngest case on record was reported by Dr. E. M. Cocks about six years ago in the *Journal of Cutaneous Diseases.* A child nine months old was brought to his dispensary class with a indurated sore on the upper lip, and a roseola.

Investigation showed no taint in either father or mother. The baby was bottle-fed and an aunt often prepared the bottle for the child. She was accustomed to tasting the milk from the nipple before giving it to the child. And her mouth was full of mucous patches.

CASE II. Dr. Hoag recently showed a fourteen months' child to his class in the New York Polyclinic. He had attended the mother in confinement and was well acquainted with the family history. He was treating an uncle of the child for syphilis. Contrary to the express orders of his physician this uncle "just gloated himself in showering kisses upon the innocent baby's face." An indurated sore appeared upon the baby's lip, followed by all the manifestations of the disease. Prompt and persevering treatment has been successful and the child is now in apparently perfect health.

Case III. The writer remembers reading in the *American Journal of Medical Sciences* a case of tonsillar infection in a boy of ten years. The mother of this patient had been twice married. The children of the first husband were healthy. The second husband had the taint of syphilis in his blood which he transmitted to his child. This boy of the untainted brood robbed the syphilitic baby of a stick of candy and infected himself on the tonsil.

Cases IV, V, VI. Dr. E. Harrison Griffin (*N. Y. Med. Jour.*, March 14, 1903) reports three cases in one family: "a male child aged nine years with a chancre of the lip; a brother, aged twelve years with a chancre on the tonsil and a sister, aged fifteen years, with a chancre of the upper lip. The first inoculation took place from drinking from a tin pail. The second brother, with a chancre of the tonsil became infected by sucking a stick of candy which the first brother had sucked. The sister became inoculated by kissing her brothers. A baby in the same family had a sore with a syphilitic history."

Case VII. This child who was a patient of Dr. Cocks had an indurated sore on the forehead and a macular eruption covering the body. Through some misunderstanding the child was not undressed for the photograph (Fig. 1.) The lesion under the nose is an impitigo and has nothing to do with the syphilis.

Case VIII. The writer saw recently in the service of Dr. B. F. Ochs in the out patient department of Lebanon Hospital, a girl of seven years with a large ulceration on the left tonsil which was covered with a dirty grey pus. The tonsil was enlarged and inflamed and the whole fauces was in a catarrhal condition. The submaxillary glands were swollen and of a stony hardness. There was a macular eruption upon her body and flat condylomata about the anus. The source of infection was not ascertained, though her mother confessed to having syphilis some years before and receiving treatment for it.

Conclusion: Syphilis is a contagious and preventable disease. It is communicated in the most innocent familiarities of

ACQUIRED SYPHILIS IN CHILDREN.

daily life. To acquire it is not a disgrace, but a misfortune. To transmit it either by negligence or design is a crime.

Syphilis should be fairly met as one of the arch enemies of mankind. Cases should be treated scientifically and persistently to limit the dangers of contagion. Patients and their friends should be carefully instructed as to prophylaxis. Public misapprehension should be allayed and public interest aroused with a view to the abolition of this dire disease.

273 West 70th St.

Radium in the Treatment of Naevi.—Drs. Wickham and D'Egrais, in a report to the Academy of Medicine, Paris, showed with the aid of water-color plates that flat and superficial as well as deep nævi could be treated by the simple application of radium in the form of a flat surface, varnished with a substance in which radium was incorporated. The radiations which were emitted by these varnished plates could be varied in intensity and dosed in such a way as to avoid unfavorable results. In some nævi cures can be obtained with very feeble doses of radium, but in extensive or deeper nævi it is advisable to use larger doses until a more or less pronounced reaction is obtained. The scars were soft, smooth, colorless, and good to look at. The applications did not produce any pain, and large surfaces could be treated in children at tender age, profiting by their sleep. The authors conclude that radium can be used to great advantage in the treatment of nævi, including cases which hitherto have been regarded as incurable. They note that cases with the greatest amount of color and with a slight projection of nævus are the easiest to cure.—Med. Bulletin, Jan., 1908.

CALOMEL AS A CAUSE OF CONVULSIONS IN CHILDREN.

By G. Starke, M. D.

As some drugs produce symptoms of poisoning in ordinary doses in a certain proportion of people who to all appearances are healthy and normal individuals, so calomel sometimes produces untoward effects when least expected, and due entirely to personal idiosyncracies, as the following cases will illustrate: A healthy boy of 3 years having the usual symptoms of indigestion, as vomiting, foul tongue, anorexia, etc., being a hearty eater, was given one grain of calomel with two grains of bicarbonate of soda. This was promptly followed by severe and prolonged convulsions, which were very properly attributed to his digestive derangement. The following winter the same symptoms again presented themselves and again calomel was administered with the same result, convulsions lasting on and off for two or three days, though his digestive canal was thoroughly emptied each time, and bromides, chloral, etc., were prescribed. This same condition was met with in him two or three times more at periods of six months or more, so that the possibility of calomel being the cause of convulsions was overlooked. At any rate the fact that the convulsions always began after the calomel had been administered led the writer to the view that it was the cause of them and in subsequent similar attacks no more of it was given, with the result that the boy has had no more convulsions since, now over 4 years, though he has had his attacks of indigestion just the same as before.

Another boy of 13 years who also had an attack of indigestion was given one grain of calomel, with the protest from the mother that a doctor had previously cautioned her not to give the boy any "powders" for a laxative, as he would be likely to have convulsions from them, but upon my insisting that the powder would not harm a baby it was given with the result that the convulsions followed as a prompt sequence.

Though these results are few and far between it is always well to remember the possibility in an obscure case and prevent its recurrence.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

STATED MEETING HELD FEBRUARY 13, 1908.

DR. ELI LONG, CHAIRMAN PROTEM.

A CASE OF MONGOLIAN IDIOCY.—Dr. Matthias Nicoll, Jr., presented a nineteen months old baby representing a symptom complex that he said he was not able to grasp and he wished information on the subject from the members present. The baby was the child of Russian-Jews, but there was nothing in the history that threw any light on the case. The parents had been in this country three years. No specific history was obtainable. The mother had had no miscarriages. Both parents appeared in normal health. At birth the baby weighed six pounds. The mother noticed that the eyes were prominent at birth. The child was breast fed. Up to the age of six months the child was well nourished but was not bright. She had an attack of suppurative cervical adenitis which was operated upon and followed by erysipelas, the child being ill for three months. She had severe gastro-intestinal disturbances, followed by loss of flesh and strength. When one year of age she was taken to a physician who found the liver and spleen enlarged, and the blood in poor condition. A trip to the sea shore resulted in a gain in weight. The child was brought to the clinic about five weeks ago. The tongue protruded and other signs made the diagnosis appear to be a typical cretinism; but upon a thorough examination the condition was found not to be at all characteristic of that disease. The child could see very little, if at all. There was a double glaucoma. The spleen was below the umbilicus. The liver was about one-half a hand's breadth below the free border of the ribs. The temperature was 96. Taking the temperature a dozen times it was found to vary between 97.8 and 102 to 103. The child weighed 16 pounds. The anterior fontanelle was still open. She had eight good teeth. Dr. James Ewing made the blood examination and reported as follows: Haemoglobin, 63% (Fleischl-Miescher); red cells, 3,820,000; leucocytes, 11,500. In the stains he found very marked poikilocytosis, anisocytosis, polychromatophilia, no nucleated reds. The marked changes in the red cells' morphology, especially a tendency to show excessive haemoglobin, made Dr. Ewing regard this case as tending to the type of pernicious anaemia. He did not think the case was very satisfactory for Banti's category, but thought it was best to call it severe secondary (pernicious) anaemia, and the cause was probably found in the history of severe gastrointestinal disturbances. The mental condition must have little to do with the blood. Dr. Nicholl showed a picture taken three weeks ago. So far as the mental condition was concerned it showed the characteristic deficiency. He believed it to be a case of Mongolian idiocy. The child had been under treatment but one month, and the fundus of the eyes had not been examined as yet. Dr. Herman Knapp, who was present, examined the eyes and said that the pupils were movable and the eyes showed sight.

Dr. H. W. Berg reported a case seen by him some ten years ago with enlarged liver and spleen, exophthalmos and cardiac lesions. The exophthalmos was due to cardiac insufficiency, whereas the enlargement of the liver and spleen was congenital.

These children very frequently had congenital lesions of the heart, and he considered the exophthalmos one of the signs of congenital cardiac lesion.

THE INDICATION FOR STIMULANTS IN PEDIATRIC PRACTICE.—Dr. Sara Welt-Kakels read this paper. She said the promise of recovery from disease depended greatly upon the relative integrity of the heart muscle, and the prevention of cardiac impairment which threatened the child even more than the adult. This would be accomplished not so much by giving cardiac stimulants early at the onset of the disease, but by avoiding drugs which had a depressing effect on the heart or such as might derange the stomach, since flatulency would seriously interfere with the heart's action. The aimless administration of digitalis, strophanthus or alcohol was often harmful. She believed that alcohol was one of the best cardiac stimulants; it also had a nutritive value. In lobar pneumonia and other acute fevers, alcohol might not be required during the first few days, but when the little patient became depressed and the pulse was compressible and soft, between 120 and 130, usually the precritical stage, then it might be required. Alcohol might be used in very large quantities in cases of sepsis and without unpleasant effect. In cases of erysipelas with profound sepsis in the infant, they were often influenced as little by external applications as by the antistreptococcus serum, and generous doses of alcohol and camphor seemed to be the only remedy to resort to; here heroic doses of alcohol were required. In the profound sepsis in children ill with diphtheria and the septic varieties of scarlet fever, Jacobi said that it was almost impossible to give too much alcohol. Kerley had mentioned a child of 14 months ill with diphtheria taking four ounces of brandy in twenty-four hours without showing signs of intoxication. At the onset of cardiac weakness in acute fevers, as shown by weakened first sound, accelerated pulse and reduction of arterial tension, besides alcohol the use of digitalis, strophanthus or strychnine was indicated. The cumulative effect of digitalis in children was more prone to occur than in adults. Strophanthus had similar action to digitalis but had no such cumulative effect and might be used for a longer time. Digitalis was very useful in the treatment of chronic cardiac diseases, but it should not be given indiscriminately, or as a routine treatment. When the signs of failing compensation appeared this drug should be given in comparatively large doses until its effect was evident. In children with congenital heart lesions, with communicating ventricles, the administration of digitalis might prove dangerous. Recently two new preparations of digitalis had been recommended as especially valuable in pediatric practice by Wochsinger and others, digitalis dialysat and digalen. In the extreme cases of heart failure, either in the early or late stages of any infectious disease, with weak apex beat and indistinct heart sounds, feeble pulse, and labored respiration, sometimes vomiting and abdominal pain, immediate relief was required and full doses of cardiac stimulants might be given, such as strychnine, caffein, camphor, whiskey, etc. In order to effect relief to an enfeebled heart muscle and restore the circulation in certain urgent cases, when pharmacotherapy failed, they might resort to physical measures of treatment, venesection and hypodermoclysis. Venesection was again gaining in favor; blood letting might be resorted to in the presence of vital indications in the very young with good results. Most frequently, however, it was indicated in older children. The opening of a vein in young children was difficult because of the amount of fat in the subcutaneous tissue and the small calibre of the vessel. Hypodermoclysis rendered the toxins circulating in the blood less effective; it supplied the needed water to the system; it stimulated the action of the heart; it raised arterial tension; it stimulated the action of the kidneys, thus aiding in liberating the system of its toxins. Hypodermoclysis was an excellent life saving measure.

THE USE OF ANALGESICS IN PEDIATRIC PRACTICE.—Dr. Le Grand Kerr read this paper and in summarizing he said that they found that analgesics had a very restricted use in pediatric practice because there was so few of them that were not dangerous to use during childhood. On the other hand they had a wide field of usefulness because children did not bear pain well; they bore it patiently, but its physical effects were proportionately great. There were some things that had been well demonstrated in regard to analgesics and their administration during childhood. (1) They were all more or less transient in their effect, except in the case of a very few of the weakest ones. (2) They were all more or less objectionable. a. Because of the liability to the formation of the drug habit; b. Because of the irreparable damage done to a developing nervous system when their use was prolonged. c. Because of the danger of overdosage (by accumulation). d. Because of the irritant effect which most of them possessed. There were some well defined rules in their administration. 1. They must be given only when absolutely necessary and after a careful consideration of the relief which might be obtained by their external and local rather than the internal administration. 2. They must not be given at such a time or in such a manner as to obscure the diagnosis. 3. The cause of the pain must be removed whenever possible before the internal administration of an analgesic. 4. The dose should be very small at first and for three reasons: a. The child might be susceptible to the drug use. b. Relief might be obtained by the first dose and relief from pain in a child once established tended to continue. c. The opportunity was offered for an increase in the dose later on if the demand arose. 5. Any one agent must not be used for a long time but a change must be made from time to time to avoid tolerance and habit. 6. The dose should be small and frequently repeated instead of an initial large dose.

THE PLACE OF HYDROTHERAPY IN PEDIATRIC PRACTICE.—Dr. Frederick K. W. Grosse said that development and nutrition, the season, the condition of the room and time and possibilities of the home were constantly guiding him regarding the details of hydrotherapeutic lines of hygiene. All authors now were conscious of the doctrine that it was not the reduction of the temperature alone that was the goal, but the effect upon the whole economy, to aid it in overcoming disease. They might avail themselves of the rub, the bath, the wet pack and cold compresses. According to the age a sponge was used, a linen mitten, or a coarser material for the rub and friction. To rub in measles and scarlet fever was not contraindicated, but in the severer disease, as infantile paralysis, typhus, epidemic meningitis, acute rheumatism, etc., the treatment was given between other applications. The procedure consisted in the use of the half bath. The hot full bath was of value in certain cases, especially in impending collapse, in cerebrospinal meningitis, and to promote the appearance of the rash in the exanthemata. The wet pack was recommended by some in measles, scarlet fever, bronchitis and bronchopneumonia. The Bälz bath at 107 was of inestimable value in acute rhinitis and in all forms of cough, as well as in pseudo-croup, pertussis and in nephritis. The hot sand bath was well tolerated and especially handy in home treatments.

THE PRINCIPLES OF THE CLIMATIC TREATMENT OF CHILDREN.—Dr. F. L. Wachenheim said the three important elements they had to consider were the temperature, the phases of the atmosphere, and the pressure of the air as modified specially by elevation above the sea level. Climatic rest cures were especially indicated in such affections as nephritis and uncompensated heart lesions. The temperatures above the indifferent point were not at all sedative but stimulating that was harmful if prolonged. Young children stood cold badly. Rain and snow in moderation was useful, laying the dust. A low relative humidity was of value in lowering the sensitive temperature or raising the indifferent temperature. A relative high humidity at moderately high temperatures was valuable when free transpiration was called for. High altitudes were valuable as a general tonic in torpid states, but contraindicated in severe organic diseases; here rest was indicated. The anaemias of young children, the victims of general malnutrition, rickets, scrofulosis and chronic tuberculosis all did better at moderate elevations.

Dr. H. F. L. Ziegel said while sojourning a year in southern California he was impressed with the fact that measles, scarlet fever and diphtheria appeared as very mild cases, and were seldom of a severe type, and rarely were followed by complications. They had what was termed "all-the-year-round" climate, with a temperature in winter but about about ten degrees lower than that of summer. Recurrent attacks of tonsillitis, so common in the east among rheumatic children, was almost unknown there. The erythrocytes and haemoglobin were greatly increased by a stay in the mountains. It was a strange thing, however, that in some cases altitude caused anaemia, while in other cases, it cured anaemia.

Dr. Wachenheim said that if a person with five million erythrocytes went to a climate where the number normally was seven million, as in Denver, Colorado, he would suffer for a time from a relative anaemia; this resembled the anaemias that followed severe hemorrhages. After a three weeks' stay in Denver this relative anaemia disappeared. To send some children to an altitude of 6,000 feet was a great mistake. Nobody could go from a low altitude to one of 6,000 feet without suffering great discomfort.

Dr. H. W. Berg believed that venesection in children was a very dangerous procedure; it was a very difficult matter to find the vein, and again children stood loss of blood very badly. Antipyrin and other coal-tar products were dangerous drugs and, if given, the effects should be watched with great care.

Dr. Henry D. Chapin said the antipyrin was a drug of great value in cases of whooping cough.

Dr. B. van D. Hedges of Plainfield, N. J., emphasized the importance of giving heroic doses of alcohol in the treatment of diphtheria, especially in the desperate cases. In one case a tablespoonful of brandy was given every two hours in accordance with the orders of Dr. O'Dwyer and with good results.

Dr. F. K. W. Grosse after practicing fifteen years never used any cardiac stimulant except alcohol. As the result of the baths he said there was an alteration in the blood distribution; the blood was not circulating equally in the body; in some situations it was more or less stagnant, in others, it was circulating with more or less rapidity. This same change in its distribution was shown during digestion.

Dr. Henry Heiman emphasized the importance of having the patient in bed when taking digitalis if the best results were to be obtained. He used morphine, phenacetine and salol a great deal in his practice, and had never had any evil effects from them. When the coal-tar products were administered it was their duty to keep close watch upon the effects produced, and they should never be prescribed in large quantities. Hydrotherapy in children was a valuable means of treatment; in the strong, the sthenic type of children, the cold baths were better borne than in the weaklings; in the asthenic type of cases, the weaklings, the warm baths were better.

Dr. Wachenheim asked how it could be explained that a person going to Leadville, Colorado, in the course of two or three weeks, would have a blood count showing eight millions erythrocytes, an increase in that time of about three millions; did anyone mean to say that three-eighths of the total number of erythrocytes were stored away? and if so, where?

Dr. Sara Welt-Kakels said that antipyrin was valuable in whooping-cough, and could be given with safety in small doses. Venesection was an old method of treatment that was again coming into vogue. In uremia it had been used with the happiest of results.

Dr. Ziegel granted that in most cases altitude had a beneficial effect upon the blood.

Dr. Wachenheim said that the erythrocytic count of those living in the Alpine mountains showed eight millions; while those living in the valleys showed but five millions. The number of red cells increased proportionately with the elevation. An average healthy individual from a low level ascending to a high level would suffer the symptoms of anaemia, such as dizziness, faintness, collapse, etc., but in the course of time the recuperative power of the blood would show itself and would catch up to the required composition.

MEDICAL SOCIETY COUNTY OF KINGS.

Section on Pediatrics.

STATED MEETING HELD JANUARY 17, 1908.

DR. A. D. SMITH, CHAIRMAN.

TREATMENT OF ECZEMA IN INFANCY AND CHILDHOOD.—J. M. Winfield, M. D. Eczema is the most important of the diseases of the skin, forming as it does, one-third of all the cases treated.

While there can be no set rules for the treatment of eczema, if one will remember that this disease is an acute catarrhal inflammation of the skin, one can hardly go astray in its treatment. This fact is a matter of some importance for it is a disease that will resent maltreatment, or, on the other hand, improve under proper treatment. Thus the treatment should be such as is suitable for a catarrhal inflammation that is acute, sub-acute, or chronic. These terms apply to the severity of the process, and not to its duration.

The following four types of the disease are recognized: Erythematous, papular, vesicular and pustular.

The erythematous is the dryest, mildest, form of eczema. Although it may be found distributed over the whole body in patches, it is most frequently found on the face and hands, where it resembles an ordinary chapping. Itching in childhood is not marked.

The papular type may be seen in children, but it is more common in adults.

The point of election for the vesicular type is the face. As the duration of the vesicular stage is so short, the vesicles are rarely seen, and the case comes under observation in the stage of exudation.

Pustular eczema is a papular or vesicular eczema that has become infected. It is generally seen on the heads or faces of strumous or dirty children.

Squamous eczema is the stage of resolution in any of the preceding varieties.

ETIOLOGY.

External irritation, irritation from the gastro-intestinal tract, heredity (which has but slight influence), sex (males being somewhat more prone to the disease than females), faulty or excessive diet, internal parasites, or a tight prepuce. It must be remembered that no one of these causes is sufficient to produce an attack of eczema. There must be a combination of them.

DIAGNOSIS.

The disease is most likely to be confounded with pediculosis, capitis, impetigo, scabies and syphiloderma. In pediculosis, the locality of the lesions, which is pathognomonic, will make the diagnosis.

Impetigo begins as pea-sized pustules, not as pinhead-sized papules or vesicles.

Scabies never occurs on the face or head. Its lesions are found between the fingers, or on the wrists, about the nipples, or in the axilla. The itching is more severe than in eczema.

Syphiloderma is usually more sharply defined than eczema and the center frequently shows a tendency to heal. The color is that of copper, or of lean ham. There is no scaling or infiltration, and pigmentation is nearly always present. Syphilitic lesions do not itch.

TREATMENT.

The clothing should be as light as possible, and linen, cotton, or silk underclothing should be used in place of heavy flannels. The clothing should not be too tight. Water must be used for bathing, at times, and when this is the case, it should be soft. If this is not obtainable, the water should be boiled and settled. Frequently, bran may be added with advantage. After they are washed, the lesions should be very gently dried, and cold cream or oil applied. If the child is fat and flabby, talcum, lycopodium, or rice are to be used as dusting powders. Of these, talcum is the best because of its mineral nature; for vegetable powders, when decomposed, offer an excellent medium for the growth of bacteria.

Most children with eczema have been brought up on proprietary foods. If human milk is unavailable for these little patients, they should be fed on cow's milk, diluted with whey. In older children, the bulk of the diet should still be milk. Fruit should be limited to a baked apple or an orange. In short, the diet should be made up of food which is easily digested, and which is not apt to decompose in the gastro-intestinal tract. For constipation, malted milk is used.

Medication is to be reduced to a minimum, and if the foregoing instructions be carried out, it will be hardly necessary. If the child is strumous, cod liver oil should be given; or if the strumous diathesis is an expression of inherited syphilis, mercury. Aresnic should NEVER be given to young children.

Itching can generally be allayed by external applications. If these fail, bromides may be given in small doses, carefully watched; for the bromides themselves, in children predisposed to eczema, frequently cause lesions of the skin. All applications should be bland and soothing. In erythematous eczema, it is an excellent plan to cover the lesions with cold cream, or vaseline, which latter, particularly when dusted over with talcum powder, forms an efficient protective dressing. If the skin is denuded, talcum alone may be used. When oils or ointments are to be applied, all scales and crusts should first be removed with some bland non-irritating oily substance, so that the medicament may come into contact with the lesion. The part is to be thoroughly washed, as often as is necessary. In mild cases, a weak ointment of ammoniated mercury or of carbolic acid may be used with advantage. If there is much induration, it is well to add oil of cade or beta naphthol to the ointment in use. At times, all ointments act badly, and then calamine lotion or compound calamine lotion has to be substituted. The tar preparations are all antipruritics, but they often aggravate the condition, and cause a tar dermatitis, which resembles closely the original eczema. An excellent antipruritic is dilute hydrocyanic acid—ten drops to an ounce of the ointment. Adrenalin, in the proportion of from ten to thirty drops of a one to one thousand solution to an ounce of ointment, is also good, but it decomposes readily.

DISCUSSION.

Dr. Bartley thought that the disease was aggravated by certain conditions of the gastro-intestinal tract. He was surprised to hear Dr. Winfield advise more fats for these children, for he had frequently been forced to reduce the fats because of an eczema caused by acid stools and the vomiting of acid fluids. He asked whether malt sugar might not cause acid fermentation, which condition, he felt sure, was a frequent cause of eczema. In the use of oils, he thought it very important to make sure that the oil was not rancid, for in this condition it is very irritating. He had not found that vaseline was well tolerated by the skin in childhood.

Dr. Hutchinson thought that there was a general type of child predisposed to eczema; that was, the plethoric, over-developed child. He was opposed to the use of talcum, not only in eczema, but on the skins of healthy children as well. In eczema, he said, the talcum, after a few hours, is rolled up into masses with the secretions, and these must be irritating. Water, he thought, caused irritation, even when mixed with bran; so that he had been in the habit of using fresh, pure, warm olive oil for cleansing purposes. In ordinary private work, he thought, the patches of eczema would not become so dirty that they would have to be washed with water. The use of vaseline he had always opposed, believing it to be irritating. He had been favorably impressed with the use of small amounts of ichthyol (½%) added to the ointment.

Dr. Ager asked for information in regard to the nature of the discharge. He had noticed an improvement in all skin cases after hard water had been substituted by soft or boiled water. He thought with Dr. Winfield that an occasional washing of the lesions with water was essential, and that water, properly used, was less irritating than the grime which otherwise was almost certain to collect. He had found phenolphtalein in half to two grain doses, an excellent laxative in these cases, and it had been his experience that from one to five minims of formalin to the ounce of ointment would allay the itching very satisfactorily. He asked whether subcutaneous injections of sea water, as they are practiced in France had been tried in this country.

Dr. A. D. Smith exhibited two photographs of a case of eczema in a breast-fed infant that had been under his care. It had been treated by the removal of the crusts with olive oil, and the subsequent application of Lassar's paste, to which later on, oil of cade had been added. The treatment of a coexisting constipation in the mother, he thought, had had a great deal to do with the cure.

Dr. Spingarn asked whether geographical tongues were frequently associated with eczema in the infant.

Dr. Edson thought that tar preparations frequently led to serious results. The eczema was checked, it was true, but the transpirations of the skin were thrown back on the lungs, and he had seen one case die as a result of this treatment. Oil of cade he considered very irritating, and occasionally poisonous.

The ordinary vaseline was too irritating for general use, and he much preferred either white vaseline or albolene.

DISCUSSION CLOSED BY DR. WINFIELD.

He thought that the use of fats in eczema was frequently of service. He had used phenolphtalein in one to four grain doses, but never in children younger than seven years. It acts very well, but sometimes intense cramps, and frequent loose watery stools follow its administration. Vaseline he used only in the erythematous type of eczema, and there only as a varnish. The yellow vaseline he thought too irritating, and had given it up for the white. Lanolin and cold cream are absorbed too rapidly to be of much use where a protective is required. Vaseline, on the other hand, remains in place and protects the skin like a varnish. Fat children who had eczema, were, he thought, rarely healthy. They are flabby and "lymphatic" looking. Water properly used, and when necessary, is not irrritating. The lesions become poisoned by their own dirt, if it is not used. The commercial oxide of zinc ointment is the worst preparation that could be used, for the grease in it is always rancid. So with sweet oil bought from the druggist. Table sweet oil however, is nearly always fresh and sweet. Oil of cade he thought, it was not safe to use promiscuously, as it was possible to poison the child with it. The best antipruritic of all—"The opium of the skin," is carbolic acid, in the strength of a few grains to the ounce. Geographical tongue is an indication of a strumous, lymphatic diathesis. Lassar's paste he did not think it safe to use, unless the amount of salicylic acid was kept down. Formalin, he did not like. The discharge in eczema was a "spoiled" serous discharge.

All applications to the face were best kept in place by a mask, and the hands should be tied down if necessary.

An Analysis of 832 Cases of Scarlet Fever, with Observations on the Diagnosis and Treatment of the Disease.—By W. N. Barlow, (The Practitioner, Jan., 1908). In speaking of the presence af albumen in the urine says: "For nephritis with blood, and scanty urine, I put the patient on milk diet, prescribe diuretics and diaphoretics, with loin poultices and free purgation, the patient being placed between blankets.

When the flow of urine is well established, I prescribe iron. Occasionally the albumen in the urine is very persistent, and, after a thorough trial of the usual methods of treatment and severe dieting, I often allow the patients up, and put them on full diet, with the result that then the albuminuria often entirely ceases. And here, much as I deprecate the use of proprietary articles, I must say that I have found sanatogen useful in keeping up the body weight, and the general nutrition of the patient, in the early stage of the treatment of nephritis, when only milk diet is usually allowed.

This food is not only useful in nephritis, but also in the case of those ill-nourished, weakly, rickety children one has to so often treat in hospital, and whose condition is made worse by the preceding fever. Its use was recommended to me by a colleague, and I decided to give it an extended trial. For this purpose, I weighed weekly eleven children convalescent from scarlet fever to whom sanatogen was given, and fourteen other convalescent children of about the same ages, in as nearly as possible the same condition, living in hospital at the same time, and getting the same food. I found that the average gain in weight of the children getting sanatogen was, in five weeks, 4 lbs. 2 ozs., and of those *not* getting sanatogen was just under 3 lbs.

I have also weighed the same child at one time, when not taking sanatogen, and another when taking sanatogen, and I invariably found that the child improved considerably, and gained more weight when sanatogen was given in addition to its ordinary diet. The following is a note on one case typical of many. H. A. æt. 6. A poorly nourished delicate child. Admitted to hospital in the convalescent stage of scarlet fever. Did not show much improvement in condition until tried with sanatogen, after which he gained in the first week 1 lb. 5 ozs., second week 12 ozs., third week 1 lb. 9 ozs., when he was discharged looking fat and well. It is a most important matter that the physical condition of scarlet fever patients should be improved as much as possible, because by so doing, the liability to the complications, which so often accompany the convalescent stage of the disease, is thereby minimised."

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 156 Fifth Ave., New York.

Telephone 1032 Gramercy.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL.

VISITING THE FATHER'S SINS.

Dr. H. K. Carroll, late special agent of the United States Census office has estimated that in 1907 there were over 80,000 Christian Scientists in this country. As this number embraces only regular church members, it is safe to say that there are at least 150,000 children, one or both of whose parents are followers of Mrs. Eddy's cult. That this enormous number of helpless beings should be under the control of guardians who consider the practice of medicine not only useless but a questioning of Divine Omnipotence, is startling to say the least.

Cases are reported with alarming frequency where deaths have occurred from such diseases as diphtheria, scarlet fever, pneumonia and typhoid fever owing to a lack of medical attendance and one conviction of a parent has recently been upheld. How many such murders are not brought to light, how much unnecessary suffering is permitted, can never be known.

Taking fright at some alarming disclosures Mrs. Eddy, it is understood has promulgated an edict that in dangerous cases physicians may be called upon. The object, of course, is to provide for a death certificate in cases where results are fatal while if recovery occurs, the healer claims the credit, since absent treatment is to continue during the time of the physician's ministrations. But even with this relaxation of what was originally a hard and fast rule, the situation is none the less alarming. Usually the appeal to medicine is made when the disease has reached an acute stage, and in consequence the physician finds himself under a tremendous disadvantage.

The Penal Code of New York makes it a misdemeanor (and as such punishable by imprisonment for not more than one year or by a fine of not more than $500 or by both) to omit to furnish medical attendance to a minor and the legislation of a majority of the states, if not of all, contains a similar provision. The law is sufficient and the fault lies with the prosecuting officer. The latter, however, usually pleads the excuse that coronors and petty jurors are often influenced by the apparent good faith of the parents and are disinclined to hold any one accountable for the practice of his religion. Both pleas are so utterly absurd that no man of even less than average intelligence should consider them for an instant. The Indian medicine man may have implicit confidence in the effacacy of the tom tom to drive out evil spirits, but if a cult should arise in civilized districts which would dictate similar methods of treatment the result can easily be foreseen.

Again while freedom of religious belief must in general be left undisturbed a point can be reached when the general welfare of the community intervenes. Otherwise we would have no justification for stopping polygamy in Utah.

H. Gerald Chapin, Esq.

ABSTRACTS.

Gastric Conditions in Infants. (Lancet, Dec. 14, 1907). —Miller and Wilcox, as the result of a series of investigations, find that differences exist in the gastric secretion in various cases of infantile wasting, and that these differences may be shown to correspond to three clinical groups: First, pure "marasmus," which they term a trophic dyspepsia; second, hypertrophic stenosis; and third, cases of pyloric spasm unaccompanied by hypertrophy, which they find to be acid dyspepsia. They conclude that in acid dyspepsia the importance of alkaline gastric lavage, together with the administration of alkalies, such as sodium citrate or bicarbonate, will be obvious. In regard to hypertrophic pyloric stenosis the best diet would be one of a non-coagulable nature, such as a whey and cream mixture, citrated milk, milk powders, or even milk treated with an antirennin preparation, such as might be made from the serum of goats which had been given repeated subcutaneous injections of rennin. They emphasize the importance of giving the smallest possible doses of food in marasmic conditions, for large amounts run the risk of setting up what may be a fatal diarrhoea, and in hypertrophic pyloric stenosis a large vomit and death.—Jour. A. M. A., Jan 11, 1908.

Gazette des Hôpitaux, Académie de Médicine, Paris, Nov. 19, 1907.—Dr. M. Ladonzy showed two cases of cardio-vascular malformation due to heredo-syphilis, in two meetings. The latter case shown at the above date was a new-born infant, afflicted with characteristic specific peri-anal ulceration, coryza, enlarged liver and kidneys. Although there had been no breast nor cardiac murmur during life, the autopsy revealed the persistence of the ductus arteriosus and an aortic atresia.

We had to deal here with a malformation, caused by an arrest of development. The natural law of evolution had been influenced by heredo-syphilis. Dr. Fournier stated, that he had observed many such cases of dystrophy of syphilitic origin as he terms the condition.

In his opinion no disease exerts its fatal influence in this direction more than syphilis.

E. W. Dittrich.

Gazette des Hôpitaux.—Acute Complications of cerebro-spinal meningitis. DRS. PAUL SARINTON and ROGER VOISIN.

In the above article the authors enumerate the acute complications of cerebro-spinal meningitis, discussing them as to their clinical value. The nervous complications are considered above all as the most important ones, while among others the cutaneous manifestations are surely interesting to us, as seen from the French point of view.

"The Americans call this disease 'spotted fever,' fièvre tachesée, purpuric fever, the Scotchmen, 'febris nigra' on account of an abundance of sanguineous suffusions, so frequently seen in their countries. In France these manifestations are observed sparsely."

As those of secondary and infectious nature they mention bed-sores, while they chiefly are caused by pressure and uncleanliness, the body being emaciated and frequently soiled by excretions, they also may appear on places that are exposed to slight pressure only and are then due to an abnormal vasomotor excitability. To this they also attribute long persistent red spots, which might be mistaken for erythemata.

Even the most scrupulous care of the skin will not absolutely prevent secondary infections of streptococcic or staphylococcic nature. Herpes, a frequent symptom of the above affliction may produce serious complications by its tendency to become confluent. The same may be said of infectious erythemata of scarlatiniform but chiefly polymorphous appearance.

Evaiss is cited as having described some cases, complicated with herpes zoster. In one, a meningitis of otitic origin, zoster of the ophthalmic region was observed.

E. W. DITTRICH.

1. **Tuberculosis in Childhood.**—(British Med. Jour.) MC CAW formulates the following rules to protect children from the ravages of tuberculosis: 1. The notification of all births within twenty-four hours. This would enable health inspectors to examine into the state of the child's surroundings; to have the child removed, or precautions taken, should any case of tuberculosis exist in the house, and to give suitable directions for the care of the child and especially to encourage breast feeding. 2. Complete control of the milk supply by the State. This should include the application of the tuberculin test to dairy cattle, and the removal of all such as react to this test; cleanliness in the collection of all milk, and in the transmission of it from the dairy to the consumer; the removal of all dairies from the centre of large towns and cities. 3. Medical inspection of school children and school premises. First, to detect and remove children who are actually ill or unfit to attend school; and secondly, to ensure

proper ventilation and sanitary arrangements in the schools, and to prevent over crowding. The elementary principles of hygiene should be taught to even young children; to older children the principles of domestic hygiene and economy should be added. 4. Housing reform. Dwelling houses in the poorer districts should be made more sanitary, especially with regard to the free access to them of sunlight and fresh air. A leveling up of the social and domestic conditions of the poor is urgently required, for of the 1,200,000 children born each year in Great Britain, fully one fourth to one third of them are born to want and squalor. 5. Segregation of advanced cases. All advanced cases of phthisis should be segregated as far as possible and treated in special institutions set apart for that purpose. Children who are allowed to live in the house with a consumptive are exposed to serious risk. 6. Notification of the disease should be compulsory. By this means health officers would know where the disease existed, and it would enable them to take suitable precautions against the spread of the disease, by disinfection and other means. The large proportion of tuberculosis in children comes within the purview of the surgeon to whom the treatment may be safely left. Our increased knowledge regarding the opsonic index has brought treatment with tuberculin within the realm of safe therapeutics, and the clinical success which has attended the employment of this treatment has firmly established its position as a remedial agent of the first importance.—N. Y. Med. Jour., Jan. 11, 1908.

Urinary Infection in Children.— (Journal of the American Medical Association, December 14). I. A. ABT, Chicago, describes the bladder and kidney infections in children which are almost always of bacterial origin. He states that the infection is most frequently an ascending one, though congenital malformations predispose to it. During the past few years 22 cases of cystopyelitis have come under his observation, mostly in infants under eighteen months and nearly all in private practice and in families in comfortable circumstances. The trouble usually began suddenly with restlessness and fever, anorexia and sometimes persistent vomiting. Local pain seems to be sometimes present. In several of these cases casts were found in considerable quantities The urine is usually cloudy and of low specific gravity. If the colon bacillus or that of tuberculosis is the cause the urine is usually acid; staphylococci and streptococci generally occur with alkaline urine. The blood shows a marked leucocytosis. Twenty of his patients reovered. In one of the fatal cases, there was a malformation of the kidney. The other child died of a protracted and neglected cystopyelitis. The prognosis, if early recognized and properly treated, is favorable. The diagnosis can only be made by an examination of the urine, and it can not be too strongly emphasized that infants with a persistent irregular fever for a succession of days should have the benefit of both a chemical and microscopic urinary examination. Pus in an acid urine with epithelial cells and occasional casts and colon bacilli, is proof positive of a cystitis or pyelitis or both. As a prophylactic all who have the care of very young children should be instructed as to the importance of thorough cleanliness of the buttocks and genitalia. The treatment depends on the cause; if it is a stone or foreign body, surgery is indicated, but if an infection, the free administration of fluids, especially water, is advised. Medicinally, hexamethylenamin (urotropin) is the most valuable remedy. To infants one to two years of age, it may be given in one-grain doses four times a day and increased, if it is well borne. Salol may be given either alone or in combination with urotropin to children of this age. In one rebellious case he found one drop doses of guaiacol of advantage. During fever the nourishment should be largely liquid and non-irritating. Irrigations are not usually necessary, except in the severe forms of streptococcic or staphylococcic infection. In other respects, the treatment is expectant and symptomatic.—The Med. Bulletin, Feb., 1908.

Essential Insufficiency of the Heart in Childhood.— (Journal of the American Medical Association, December 14). A. W. FAIRBANKS, Boston, calls attention to a condition he has frequently observed in the routine examination of children ,but which appears to be neglected in medical literature. He regards it as a muscular deficiency of the heart comparable to muscular deficiency elsewhere in the body and due to irregular development. The symptoms are inconspicuous, the more prominent are pain in the chest and shortness of breath on moderate exertion, cyanosis under similar conditions and sometimes persisting after the exertion for a short time, seen especially in the lips, face and fingers, and cold hands and feet. A more remote effect and less constant but more striking is the backward physical development of these children, most noticeable between th eleventh and thirteenth years. Some of these children show a discrepancy of several years between their actual and apparent ages. They are notably deficient in the usual activities of childhood. In its ultimate results muscular insufficiency of the cardiac muscle is much more serious than the same condition elsewhere in the body, tending to an organic deficiency in time. Fairbanks does not, however, consider such defects absolutely essential for the production of all the secondary symptoms of deficient heart, or of the remote results of such deficiency, when long persistent, on the growing body. These cases are generally overlooked by the family physician who finds no organic disease, and the symptoms observed are credited to some error of hygiene or diet or to something the child is expected to outgrow. He does not venture to say just what etiologic factor is directly to blame for this insufficient cardiac development, but believes that every infection or toxemia affects the cardiac muscular and nervous structure to a certain degree, and advises giving more attention to the slight ailments and greater care during the convalescence from the ordinary infections in this stage of life. The treatment advocated is the same as that for cardiac incompetency from demonstrable organic disease—rest, absolute atfirst, combined with massage and warm carbonated saline baths and, in the case of older children, resisted movements, and, at a later period, graduated physical exercises under control of a physician or nurse.—Med. Bulletin, Feb., 1908.

The Channels of Entrance of Tuberculosis.— (Presse Médicale, October, 1907, p. 644) CALMETTE, at the Sixth Conference on Tuberculosis at Vienna last September, after criticising the experiments of Küss and Findel on aerial communication, summed up the results of his own work as follows: (1) The contagion of tuberculosis cannot be experimentally effected through the respiratory track except with the greatest difficulty, by making animal inhale tuberculous products or cultures in the state of fine spray. The inhalation of dry powders also only exceptionally succeeds in effecting contagion. It must therefore be admitted that dust contaminated with dry bacilli does not play any important part in natural infection. (2) The ingestion of virulent tuberculous products or of cultures in the state of a fluid emulsion is constantly effectual in producing tuberculosis in all kinds of susceptible animals. The bacilli can then be absorbed through the intestinal mucous membrane without producing any lesion by their passage; they are carried by the chyle to the mesentric glands. Thence they are frequently carried by phagocytic leucocytes into the lymph current of the thoracic duct and thence distributed in the blood stream. The pulmonary capillaries are most prone to become the seat of the first tubercular lesions, hence the extreme frequency of pulmonary tuberculosis in relation to other localisations of hematic origin. (3) The evolution of the tuberculous infection is all the more rapid and serious as the number of virulent elements absorbed by the ingestion is greater, and as the absorptions are repeated at shorter intervals. (4) Closed tuberculous lesions resulting from a single infection are capable of cure. This cure confers a true immunity against fresh infections through the digestive tract. The duration of this immunity is not yet ascertained. (5) Parasitic heredity of tuberculosis is extremely rare. It always results from an infection *in utero,* and cannot be considered a factor of any importance in the contagion of tubercle. (6) The idea of *tuberculisable soil* or *heredo-pre-*

disposition must be abandoned, since experiment shows that tuberculous infection is always possible in susceptible animals, and that it is in direct relation either to the number of virulent elements absorbed or to the frequency of contamination. In relation to some of Calmette's conclusions it is interesting to reproduce a summary of George Carpenter's observations under the heading of "Tuberculous Peritonitis: Pathology and Morbid Anatomy," at the Special Meeting for the discussion of Tuberculous Peritonitis by The Society for the Study of Disease in Children (Reports of The Society for the Study of Disease in Children, vol. III, 1902-03, p. 109). Summary.—(1) Tuberculous disease originates in some children in the intestines or abdominal lymph glands. Either of these structures, and less commonly the latter, or both in combination may be involved. These lesions are mostly associated with peritonitis. (2) Cases that are strictly confined to the intestines, the mesenteric glands and the peritoneum are comparatively rare; to the peritoneum alone, or combined with tuberculous inflammation of the serous membranes rarer still. (3) Implication of other organs in fatal cases of primary abdominal tuberculosis is not uncommon, and of all organs and structures the lungs appear to be most likely to be attacked. Invasion of the lungs in such cases probably occurs *via* the thoracic duct and pulmonary artery, the lungs acting as a filter. This is contrary to the experience of others who consider that food tuberculosis may get well or spread but never leads to tuberculosis of the lungs. (4) Primary abdominal tuberculosis is sometimes associated with tuberculosis of other parts which are free from external entrances, *e. g.* the brain, the meninges, the pericardium, the pleura, the choroid, etc. (5) The majority of cases of ulcerating tuberculosis of the lungs contract tuberculous intestinal ulcers, tuberculous lymph nodes or a combination of the two conditions. This mode of onset of abdominal tuberculosis is more common than the other. It is not so frequently associated with peritonitis. The clinical symptoms in such cases are either pulmonary or perhaps cerebral, and not often abdominal.—Brit. Jour. Children's Diseases, Jan., 1908.

A Method of Milk Production.— Chas. E. North (Medical Record, Feb. 15, 1908), has found after a long series of experiments that milk with a low bacterial count can be produced at a low cost without the use of a modern sanitary cow stable and appliances at each farm, and while it can never take the place of "certified" milk it is comparatively safe. He would take the washing of cans and utensils away from the producer and supply him from a central station. He offers the following suggestions:

1. The use of sterile covered pails and sterile milk cans by the ordinary farmer will immensely reduce the bacteria in his milk, even though no other sanitary precautions are taken.
2. The dairy house, where washing and sterilizing of utensils and cooling and bottling of milk are done, may be at a distance of several miles from the cow stable without materially increasing the bacterial count, provided the milk is delivered at the dairy house within one hour after milking.
3. Five cents per quart to the farmer will pay him for his trouble of milking in a sanitary way and for making two deliveries a day. In many instances it would compensate him for keeping his herd free from tuberculosis.
4. Increase the functions of the creamery, so that it becomes a washing and sterilizing plant for all the milking pails and milk cans of all the farmers contributing milk to it.
5. Substitute cover milk cans or "pailcans" for the wide-open milking pails now in use.
6. Let the creamery do all the cooling and bottling of milk. Take the cooling out of the hands of the farmer.
7. Let the milk dealer pay the farmer five cents per quart for such milk.
8. Let the public pay the milk dealer ten cents a quart for milk delivered in the city.
9. High prices of certified milk is due to the expense at the dairy house.
10. Concentration of operations at the creamery for a large number of farmers would be business economy, and would likewise eliminate many sources of contamination.

A. Jackson.

The Management of the Umbilical Stump.—J. A. Harrar, New York. (Bulletin of the Lying-In Hospital of the City of New York, September, 1907). In a series of nearly 10,000 cases it was found that separation of the cord occurred between the fourth to sixth day in 73 degrees of the cases; the small granulating core left usually heals over by the tenth day. Various deviations from the normal have been noted; of these hemorrhage and umbilical hernia are the most important. Late hemorrhages due to constitutional trouble (usually hemorrhagic disease) after separation are commonly fatal if local measures do not stop the oozing. A hare lip and figure of eight ligature are employed. Internally calcium lactate, adrenalin and gelatin may be administered.

Immediately after tying the cord with three-sixteenths-inch cotton tape one-half inch from the skin, a dry sterile gauze dressing is applied and left in place for five days. If, when inspected, the cord is still moist the new sterile dressing is wrung out in 50 per cent. alcohol. The cord is not touched but handled with spuds (toothpicks wrapped with cotton). If there is excessive granulation a sterie silver stick is used. No dusting powders are used if possible.—Am. Jour. Surgery, Feb., 1908.

Asthma in Infants and Children.— It is almost certain, says Edmund Cautley (Clin. Jour.), that in every case there is a neurotic element. Gout also appears to be a strong predisposing factor. The exciting causes may be central or reflex. All affections which produce catarrh of the respiratory tract may lead to asthma. The first attack often dates from an attack of bronchitis or bronch-pneumonia, especially when secondary to whooping-cough or measles. When there is morbid hypersensitiveness or a catarrhal condition of the respiratory mucosa a slight cause may bring on a paroxysm by reflex stimulation of the vagus. Among these causes are wind, pollen of plants, various dusts and odors, digestive disturbance, constipation, affections of the nose and nasopharynx, and foreign bodies in various orifices. Cases have been cured by removal of some nasal obstruction, such as hypertrophied turbinals, deflected septum, polypus, and adenoids. On the other hand, nasal obstructions and adenoids are very common apart from asthmatic attacks, and true asthma sometimes follows the removal of a nasal polypus or the cure of nasal obstruction. An unhealthy state of the nasal mucosa, especially edema of a small area of the upper part of the triangular cartilage, opposite and immediately above the level of the anterior third of the middle turbinal bone, has been blamed. Cauterization of this area has relieved or cured some cases, even when it has appeared perfectly healthy. It may also cure paroxysmal sneezing. There is very little evidence of central stimulation as an exciting cause, but attacks are occasionally produced by emotion. Poisons, such as carbonic acid and those of uremia, are known to induce dyspnea, and act directly on the respiratory center in the medulla. It is probable that some cases of asthma are due to muscular spasm alone, and that in others, in young infants especially, muscular spasm is secondary to swelling of the mucous membrane. Concerning the diagnosis the writer says that stress must be laid on the more or less sudden onset, the presence of dyspnea out of all proportion to the physical signs, the absence of fever, the recurrence of paroxysms, and an appropriate family history. Care must be taken to exclude those varieties of dyspnea due to cardiac and renal disease; due to the pressure of a retroesophageal abscess, an enlarged thymus, or of bronchial glands; and the dyspnea that results from laryngeal affections and foreign bodies in the air passages. An important feature of asthma is the expiratory nature of the dyspnea, whereas in laryngeal obstructions the dyspnea is inspiratory. Hysterical dyspnea may be paroxysmal, but is not accompanied by any distress. As a general principle it is infinitely more important to attend to the general health of the child, to prevent erroneous methods of feeding, to remove local sources of irritation, and to cure the catarrhal tendency, than it is to rely upon measures for relieving or cutting short the paroxysms.—New England Med. Monthly, Dec., 1907.

Tuberculous Testicles in Children.—(Gazette des Opitaux) G. Poissonnier says that tuberculosis of the testicle in children may occur at any age, even in the fetus, or the child of a few days old. It is more frequent under two years, and becomes less so up to the time of puberty. It is generally primary in the testicle, secondary in the epididymus, which is the opposite of the localization in the adult. It is usually single. Traumatism and masturbation may be factors in its etiology, but the principal one is heredity. It may be propagated to distant parts of the body, as the lungs, or may occur with intestinal tuberculosis. The symptoms are the same as those of orchitis in the male, the process being acute or chronic. The testicle is swollen, tender, and painful. At one portion the testicle becomes adherent to the skin, an abscess forms and a fistula results. If more chronic the abscess may be walled off by fibrous tissue, and may never open externally. The only complications to be expected are generalization by means of the circulation or the lymphatics. The inguinal, iliac, and lumbar glands are generally involved. The prognosis is good, since cicatrization occurs and a certain amount of testicular tissue is usually left. For this reason treatment should be conservative, castration not being advisable. General hygienic measures such as are applicable to other forms of tuberculosis are important. Puncture of the abscess, with injections of iodine or iodoform, curettage, and drainage are the best surgical measures.—New England Med. Monthly, Dec., 1907.

Vaccination of School Children.—In another column will be found the notice of a recent decision of the Supreme Court of Ohio bearing upon this most important question.

Under a section of the revised statutes, it is directed that the boards of education of each school district shall invoke such rules and regulations to prevent the spread of smallpox as in its opinion the interests of the public require.

Under this authority the court holds that vaccination, being, according to common belief, a preventive of the disease, children may be vaccinated or excluded from the school in case it is refused.

This same question was decided by the Court of Appeals in New York State in an opinion (written by Judge Vann) from which we quote as follows:

When the sole object and general tendency of legislation is to promote the public health, there is no invasion of the Constitution, even if the enforcement of the law interferes to some extent with liberty or property.

The appellant claims that vaccination does not tend to prevent smallpox, but tends to bring about other diseases, and that it does much harm, with no good. It must be conceded that some laymen, both learned and unlearned, and some physicians of great skill and repute, do not believe that vaccination is a preventive of smallpox. The common belief, however, is that it has a decided tendency to prevent the spread of this fearful disease and to render it less dangerous to those who contract it. While not accepted by all, it is accepted by the mass of the people, as well as by most members of the medical profession. It has been general in our State and in most civilized nations for generations. It is generally accepted in theory and generally applied in practice, but by the voluntary action of the people, and in obedience to the command of law. Nearly every State of the Union has statutes to encourage or, directly or indirectly, to require vaccination, and this is true of most nations of Europe. It is required in nearly all the armies and navies of the world.

A common belief, like common knowledge, does not require evidence to establish its existence, but may be acted upon without proof by the Legislature and the courts. While the power to take judicial notice is to be exercised with caution and due care taken to see that the subject comes within the limits of common knowledge, still, when, according to the memory and conscience of the judge, instructed by recourse to such sources of information as he deems trustworthy, the matter is clearly within those limits, the power may be exercised by treating the fact as proved without allegation or proof.

The fact that the belief is not universal is not controlling, for there is scarcely any belief that is accepted by everyone. The possibility that the belief may be wrong, and that science may yet show it to be wrong, is not conclusive, for the Legislature has the right to pass laws which, according to the common belief of the people, are adapted to prevent the spread of contagious diseases.

While we do not decide and cannot decide that vaccination is a preventive of smallpox, we take judicial notice of the fact that this is the common belief of the people of the State, and with this fact as a foundation we hold that the statute in question is a health law, enacted in a reasonable and proper exercise of the police power. It operates impartially upon all children in the public schools, and is designed not only for protection, but for the protection of all the people of the State. The relator's son is excluded from school only until he complies with the law passed to protect the health of all, himself and his family included. No right conferred or secured by the Constitution was violated by that law or by the action of the school authorities based thereon.

The New York case was, on a motion to mandamus a school principal in Brooklyn to admit a child whose parents disbelieved in vaccination; in other words, similar to the Ohio case.

It is not to be expected that antivaccinationists will see any justice in these decisions. It is a cause for congratulation, however, that the great general public is to be protected against fanatics in another great State, as well as in New York.—Med. Review of Reviews, Dec., 1907.

The Cutaneous Tuberculin Test in Children.—(Munch. Med. Wochenschrift, Jan. 7, 1908). FEER speaks very highly of this test as an aid to diagnosis in doubtful cases. The positive result in young children is rarer and more important (prognostically more serious) the nearer we come to infancy, and correspondingly the probability increases that the positive reaction indicates the presence of an affection which is suspected of being of a tuberculous nature. The frequent appearance of phlyctenulæ and very unpleasant irritation after the ophthalmoreaction contraindicates in his opinion the application of that test in scrofulous children.—Med. Record.

Appendicitis in Childhood.—(By DR. W. NEUBERG in Deutsche Zeitschrift für Chirurgie, 89 Band, 1-4 Heft.)

Appendicitis in childhood is considered in a special class by most authorities, since the uniform opinion that the prognosis in children is not so good as in the adult.

The cause for the poorer prognosis in children is variously explained by different authorities. BAGNISKI, SPIELER and others point to the fact that appendicitis like all inflammatory processes develops pus much easier and oftener in children than in adults;

further, the walling off process and the formation of adhesions seems to be difficult.

According to SONNENBURG'S statistics the relation of the different forms of appendicitis of the child to the adult is about as follows:

Appendicitis simple catarrhal	17: 1.
Appendicitis perforative with circumscribed abscess	74:17.
Appendicitis with general peritonitis	22: 7.

While the cause of the bad prognosis is held by some to be due to the more rapid progress of the disease, others hold the reason to be that the diagnosis is often made later in children since they cannot localize the pain, and, too, that very often an appendicitis is diagnosed as indigestion, so common in children.

That it is very difficult in a way to diagnose in children, as mentioned above, the author says is true, but on the other hand we must admit that the diagnosis in children is much easier in many points. In the first place a whole list of the differential diagnosis need not be considered, which makes it so difficult in the adult, such as gall bladder disease, diseases of urinary bladder and of the appendages in the female.

In a small child in whom the diagnosis seemed most difficult it sometimes is made easy by digital examination per rectum. In small children up to the fourth year the index finger will reach easily over the brim of the pelvis, and then finally the cecum can be palpated, and an inflamed appendix with or without exudate should be diagnosticated, whether within the pelvis as SELTER describes it, or as the author claims even if it were above the pelvic brim. The author cites a few severe cases in children with recovery, and is thereby inclined to lean to a better prognosis than is given in some of the larger statistics, though he refuses to draw any definite conclusions. Only very large statistics of hospital and general practice can give a verdict. At present the question as to whether the prognosis is better in adults than in childhood cannot be fully declared.—St. Paul Med. Jour., 1908.

BOOK REVIEWS.

COSMETIC SURGERY. THE CORRECTION OF FEATURAL IMPERFECTION.—By Charles C. Miller, M. D. Including the description of a variety of operations for improving the appearance of the face. 136 pages. 73 illustrations. Prepaid, $1.50. Published by the Author, 70 State St., Chicago, Ill.

This little work no doubt is of some value, to a certain class of surgeons and to "beauty doctors" but we cannot believe that the serious minded surgeons will ever be persuaded to make a dimple or a tatoo the margin of thin lips so as to make them appear larger.

While there is a just demand on the part of patients for the eradication of small growths, pigmented spots, powder marks; the correction of large outstanding ears, let us draw the line at dimples, let nature make them.

AN INTRODUCTION TO THE STUDY OF THE INFANT'S STOOL.—By Paul Selter, M. D., Solingen, Germany. Translated by Herbert M. Rich, B. L., M. D., Detroit. Paper, pp. 36. Price 30 cents. The Detroit Medical Journal Co., 103-105 Broadway, Detroit, Mich, U. S. A., 1907.

So little has been published on this subject in English that the translator is to be congratulated on this addition to our literature. While the stools of infants have long been examined it has not been until the past few years that the results could be properly interpreted. The author discusses the fate of the food elements in the alimentary canal, the characteristics of the infant's feces in health and disease. *Amount and frequency of movement, form, color, odor.* Macroscopic and microscopic examination. Chemical examination of the stool and determination of the type of digestive disturbance from the examination of the stool.

Several cases are cited, in which the proper treatment was determined by the examination of the stools.

The author concludes, that "we are able to determine some very important facts from the examination of the infants's stool. We can tell whether any food element is properly digested and assimilated, and in many cases of disease we can tell which element is at fault. Whether the disturbing factor be proteid, fat or carbohydrate, in natural or artificial feeding, sugar or starch, cow's milk, or other milk, it will appear in some form in the feces. Practice has shown us further that lessening the amount of the disturbing element, or withdrawing it entirely from the food has a marked immediate effect on the character of the stools, and upon the general condition of the child."

The Production and Handling of Clean Milk.—By Kenelm Winslow, M. D.; M. D. V.; B. A. S. (Harv.) Formerly Instructor in Bussey Agricultural Institute and Assistant Professor in the Veterinary School of Harvard University. Author of a text book on Veterinary Materia Medica and Therapeutics; Chairman of the Committee on Milk of the Washington State Medical Association, etc. Price $2.50 post paid; published by William R. Jenkins Co., 851 and 853 Sixth Avenue, New York.

To the physician who wants his patients to have pure, clean milk this volume will prove of much interest and not alone to the physician but to the farmer, health officer, milk inspector, students of agriculture and dairying, in fact all who are working towards this vital end.

The author has furnished us with a complete, plain, practical and authoritative guide to the production and distribution of clean milk; all the practical details are given from the time the cow is milked until the milk reaches the consumer, the illustrations are complete, showing all necessary utensils and apparatus, barns and milk houses. It is divided into nine chapters. I. Germs, in Their Relation to Milk. II. Composition of Milk and Cream and Their Products. III. Milk Products. IV. Feeding for Milk. V. Housing and Care of Cows. VI. Handling of Milk and Cream. VII. Cost of Producing and Distributing Clean Milk. VIII. Some Hints Concerning Milk Distribution. IX. Milk Infection, and concludes with a "General Outline of a Scheme for the Control, Supervision and Inspection of a City Milk Supply."

Dr. Winslow shows that it is possible to supply a city with "safe" milk. We believe that it should be a crime to do otherwise.

Maternity.—By Henry D. Fry, M. D., Sc. D., Professor of Obstetrics, Medical Department of the Georgetown University; Obstetrician-in-Chief, Columbia Lying-in and Georgetown University Hospitals; Gynecologist to Garfield Memorial Hospital; First Vice-President, American Gynecological Society, 1905; ex-President, Washington Obstetrical and Gynecological Society; Member of the Southern

Surgical and Gynecological Society, American Medical Association, Medical Association and Medical Society of the District of Columbia, etc. A book for the lay reader, the medical student, the trained nurse. 12 mo, cloth; handsome letterpress and binding. Price, $1.50 net; postage, 10 cents. The Neale Publishing Company, Broadway, Fifth Avenue and 23rd Street, New York; 431 11th Street, N. W., Washington.

While this little book is written primarily for the young mother, it contains much that many mothers of large families should know and the family physician will save himself time and trouble and his patients much suffering and anxiety if he will place it in her hands.

Value of the Tonsils—DR. ALBERT BARDES (The Dietetic and Hygienic Gazette, June, 1907) says:

Greber, of Jena, who has studied the tonsils, both in health and in disease, more than any one else, has come to the conclusion that in civilized life the tonsils are not only worthless, but dangerous. He urges that all children should have their tonsils removed, whether they are diseased or not, and he considers such a course as beneficial as vaccination for smallpox. It is certain that if his advice were followed, the high mortality among infants would be greatly lessened and numberless children would enjoy better health than they do. When we consider that among adults most of the chronic diseases of the nose, throat and ear date from childhood, the radical measure suggested by Dr. Greber must appeal to all.

In removing the tonsils of children ether should be given if necessary, never chloroform. This relaxes the muscles and permits of the careful and thorough removal of the tonsils and of the adenoids at the same time. Many physicians make the mistake of simply taking off a slice of the tonsils.—Annals of Gyn. and Ped., Oct., 1907.

Diphtheritic Dermatitis.—Bower and Towle (Boston Medical and Surgical Journal) comment on the fact that there is very little to be found in the newer text-books on dermatology on the subject of diphtheria of the skin. Primary diphtheria of the skin is a rare affection, meaning by this a diphtheritic lesion of the skin caused by the direct inoculation of diphtheria bacilli at the spot, and not of inoculations of the skin which are continuous with diphtheria of the mucous membrane.

Five cases of inoculation of the skin with demonstration of diphtheria bacilli were observed in the university clinic in Breslau during the last year and a half. In three of these pure cultures were obtained, and their virulence proved by experiments on animals. Three of the cases from which the bacilli were obtained from pure culture were very much alike clinically. All were in children from one and one-quarter to two and a half years of age, and the lesions were purely ulcers, in the beginning of very small dimensions and extremely superficial. Later they became confluent, and usually quite large. Their form was very irregular, as the edges formed polycyclical bows of deep sinuses into the normal skin. The edges were slightly infiltrated, very intensely reddened, and only here and there somewhat undermined, and they were usually pretty sharply cut out. The floor of the ulcer was covered with a grayish white, firmly adherent diphtheritic membrane. There was very little odor. After the ulcers were cleansed, there was a speedy formation of granulation, and recovery was quite rapid. These ulcers were situated especially about the abdomen, groins and genitals. In none of these cases was there any affection of the mucous membrane, nor were there any discoverable signs in the internal organs. Diphtheria serum was injected in all these cases, and they all did well, but it is questionable whether any inferences on this score can be drawn from so small a number of cases. No trace of a toxin could be found in the blood.

The fourth case is that of a child of three, in whom the affection took the form of an infantile ecthyma. The localization was a peculiar one, the larger ulcers being in the lower abdominal and inguinal region, whereas ecthyma usually affects the extensor sides of the extremities and back. The lesions began as small pustules with an inflammatory areola. In their further development, the roof of the bullæ was broken and superficial ulcerations were formed. The ulcers were rounded, the edges surrounded by a small red areola. The floor of the ulcers was covered with a yellowish covering. Diphtheria bacilli were found by staining and by culture in only one of the larger ulcerations. Pure cultures were not obtained, nor was there any result from animal inoculation.

In the fifth case, that of a man of thirty-one, diphtheria bacilli were obtained from a deep ulcer covering the dorsum of the penis and a part of the mons veneris. Later, when the ulcer had become smaller, the spirocheta pallida was found.

The number of cases of diphtheria of the skin with the presence of Loeffler's bacilli which have been reported in the last years is small. In most of the cases in which diphtheria bacilli were found there was an infection of deep wounds, abscesses and other subcutaneous infections. In these the typical diphtheria membrane is not formed, and these affections differ in no way from the pictures which can be produced by other pyogenic affections.. The writer thinks that his first 3 cases are typical enough to warrant a probable diagnosis of diphtheria of the skin from clinical appearances alone, and the most characteristic appearances he considers to be the irregular form of the ulcers, the diphtheritic covering, and the localization.—Medical Sentinel, Dec., 1907.

The Treatment of Some Common Tuberculous Affections in Children.—DR. C. R. KEYSER in the Brit. Jour. of Children's Diseases, July, 1907, in his article states that a very common lesion of tuberculous nature is found in the subcutaneous tissue of children in the form of a small, firm, rounded mass which is freely movable. Later the skin becomes involved and the tuberculous mass softened so that fluctuation can be obtained. These masses may occur anywhere in the body, but are most common on the limbs.

These tuberculous deposits may be found anywhere in the deep cellular tissue and are quite independent of any bone disease. In these cases there is not a drop of true pus, and the author considers that incision and drainage is the worst possible treatment which can be adopted. He says that in these cases there is no elevation of temperature until this deep-seated abscess has been opened.

The author suggests that incision and complete evacuation with careful removal of all caseous masses, and of the pyogenic membrane is indicated. If the cavity is large it should be flushed with plain boiled water, or normal saline solution, to wash away the scrapings. Iodoform may be dusted into the cavity, but it is doubtful if it has much effect in promoting cure.

The whole wound should then be accurately sutured, a large pad of wool applied, and pressure maintained by means of a strapping or bandage.

"In the majority of cases the wound heals by first intention and there is no subsequent reaccumulation of tuberculous material." If the latter should occur, the fluid can be removed by aspiration or a small incision which can be subsequently sutured. The author considers aspiration of these abscesses undesirable.

In the subcutaneous variety the whole mass should be dissected out if possible, if not, after careful scraping and removal of unhealthy skin, sutures should be inserted.

Caseating glands where situated superficially or deeply should be treated by excision and suturing.

Tuberculous dactylitis should be treated by means of a Scott's dressing, carefully applied, and re-applied as often as it gets loose. If these measures are not successful the bone should be laid freely open and scraped out with a sharp spoon. The cavity should then be filled with small pieces of dicalcified bone chips, the wound sutured and a splint applied outside of the bone. In most cases, the author states, the wound heals by first intention and there is very little subsequent deformity.—Canada Lancet, Dec., 1907.

PEDIATRICS

Vol. XX APRIL, 1908 No. 4

ORIGINAL ARTICLES

THE MEDICAL MAN AT THE BEDSIDE—WHAT IS EXPECTED OF HIM AND HOW HE SHOULD CONDUCT HIMSELF.

By W. C. Hollopeter, A. M., M. D.,

Professor of Pediatrics in the Medico Chirurgical College, Philadelphia.

Gentlemen:—

I wish to talk to you this evening in an informal way on the subject of the medical man at the bedside. I regard this as a very important part of your training. Personally, I was peculiarly drilled for the sick room. I had a preceptor who allowed me to visit his cases with him and when he came out of the patient's house, he quizzed me. He asked me questions about the wall paper, carpet, furniture and everything but the patient. This continued for several months when he commenced to question me about the patient, his eyes, nose, mouth, hair, teeth, position in bed, color of skin, and what it all indicated.

Since then times have changed and instruments of precision have lessened the necessity for close observation, and the patient's knowledge of themselves and of their diseases have brought about a different state of affairs, but the physician's personality is just as important now as it ever was.

He must be polite, clean and sympathetic. That is why the quack succeeds. You may be surprised to learn that 25% of the physicians in this city are starving because of their unfortunate manner or appearance. A physician will quickly find favor because of his agreeableness, but many will be disliked, or at least, fail to gain favor in and out of the profession, because they are slovenly in their dress and uncouth in their manner. You are all taught in college the science of medicine, but very few physicians are ever taught the art of medicine.

Very frequently when the young physicians first enter a sick room, they appear very awkward, they do not know what to do with their hands and feet, and appear ill at ease and out of place. You must remember that when you are sent for the first time to see a new patient some good, kind friend has been instrumental in bringing you there. You are there at the suggestion of some one friendly disposed towards you, and you are at once put on your honor and faithfulness. Of course the patient and the family will notice your collar, your necktie, your shoes, and above all, your manners. You must therefore be clean in body and mind. A daily bath and well brushed clothes will bring you frequently a new suit with a new patient. I would suggest that you wear a clean collar every day and have a clean tie and clean hands, as sick people criticize everything. If you are clean they will talk about it, and if you are not clean they will talk more about it. I do not say you must all be models of the tailor's art, but you should wear well-fitting clothes.

No one likes a cigar better than myself but I make it a rule not to smoke before nine o'clock at night, unless off duty, as one should not smell of tobacco in the sick room. The odor of whiskey or beer is possibly more objectionable than tobacco. I have known a very excellent physician to be dismissed because he had mint drops on his breath, which gave rise to the suspicion of the drinking habit. The courtesy of the sick room is all important. As you enter the room, you may possibly find a number of visitors and it is important to know how to get them out. My patients tell me that I carry on my face the objection to the presence of others in the room. There is nothing so calculated to interfere with your judgment or break down your diagnosis, as a room full of people.

An old patient once said to me, in speaking of Dr. S. Weir Mitchell, "Dr. Mitchell can extract ten dollars out of my pocket, and dismiss me from his office, the quickest of any one I ever saw." It is an art indeed, to know how to terminate your visits, without creating offense. Do not remain too long, or your patient will think you have but little practice. The dignity of the sick room is important, and although we have very unpleasant duties to perform, we must at all times observe our dignity. One great fault of young practitioners is the tendency of talking in the sick room about the long list of calls they have to make; but the patient will probably not believe you, and after you have gone they will say so. Never allow any irrelevant talk in the sick room, but speak directly to the patient and his illness.

Another important matter, is that of self poise, and is a very hard one to acquire. It is a wrinkle, and like them comes with age. Do not change your position too frequently in the sick room. Be seated modestly, in a shaded part of the room, where you can look your patient in the face, so that you may study the physionomy of the disease and make a mental diagnosis before asking any questions. Very your personality as much as possible. Then watching the patient you can observe the injected conjunctivae, an arcus, senilus, hardened temporal artery, the position of the patient, the pallor or flush on the face and many other things.

In quizzing the patient be careful what you say; some doctors ask silly things at the bedside and physicians are dismissed for lack of dignity. A commonplace attitude is very dangerous. Do not cheapen your profession.

I always prefer to make a diagnosis, which means a careful first examination, at the patient's house, and when a patient comes to my office for the first time, I let him talk for five or ten minutes, prescribe for the leading symptom, and then ask him to send two samples of urine one week apart, for examination. At this time I arrange to call on him at his house for a more thorough examination and a diagnosis. Ordinarily, the physician will prescribe for some special symptoms which are particularly annoying to the patient, but even in this case, you may in the meantime study the case and remove the cause.

I wish to emphasize in this place, most emphatically, that drug giving is the smallest part of our work. I have practiced suggestive therapeutics for many years very successfully, which has now grown very popular. While we have good results from drugs, yet the young doctor unfortunately, seems to think that he has only to write a prescription, and this ends all. This is especially untrue, when he is treating children. It is most important to improve the hygienic environments of the patient. It is equally important that you should be an optimist, always hopeful. Dr. Osler claims that hope and nux vomica made him famous. Give absolute hopeful assurance to the patient, but to the family tell the truth. Patients will dismiss the physician, when he tells them they are going to die, therefore you must always give them hope. Hope is the best tonic in the world. Map out a plan of living for them, laying great stress on personal and domestic hygiene and have the patients always doing something to improve their personal vigor. This is not Christian Science. Patients will therefore ask for you because they know you are always optimistic.

Where the young physician will succeed the most is in the management of children. Grow strong with the children, for they are surely our country's hope and your professional strength. If you succeed with the child, you will surely gain the esteem of the mother, and the husband will come along to pay the bills. Much can be accomplished for your future strength, by a careful study of all your earlier cases, but especially is this true in children. Adenoids, enlarged glands, curved spines, flat feet and a thousand other discomforts and defects that handicap the growing child, may be elicited by careful and repeated examination. The child's symmetrical, physical and mental growth depends upon the way it is handled by its physician from the start. Your better families will ask you all kind of questions about the children, what to eat, etc., according to the child's nature. I remember very well the case of a beautiful girl, now aged 15, whom I have treated since she was two years old. She is the only child of wealthy parents, and when I first saw her, I recognized a case of sporadic cretinism, dull mind, earthy skin, stupid look, protruding tongue. All kinds of attention have been showered on her. I prescribed special tutors for her, she has been fed on thyroid extract, gradually increasing, so that she is now able to take singing and elocution lessons, with profit and pleasure.

Another case which well illustrates the benefit of devoting much time and courtesy to your so-called charity patients. This was exemplified by the following case. A girl 15 years old was a patient of mine at the Presbyterian Hospital, while I was a resident physician. A warm appreciation sprang up between us. Later, she studied nursing and subsequently, entered a wealthy family in the central part of the city, where she has permanently remained. No less than five members of the family have died, since she has been with them, and every one has left her $5,000. During all these years she has been grateful for the service rendered her in the hospital, when she was sick and poor. And she has furthermore sent me a dozen or more of the best families in the city. You never know where the bread is going, nor how it may come back to you well buttered. My old preceptor said, "take care of the patients and the dollars will take care of themselves."

Attention to many minor defects in children is of paramount importance. For example, children should be weighed, when under one year, every week, and over one year every three months, and every month where there is any doubt about gaining. They should also be regularly and carefully examined, for adenoids and large tonsils, which is much better than their removal. Insist on careful examination of the teeth. After every acute illness you must warn the family of the possible sequellae. Several times I have failed to strip children when examining them. I remember some time ago, a child was brought to me complaining of vague indistinct pains in the hips and back. On a subsequent visit, the cause was found when the shoes and stocking were removed. A case of flat foot was discovered. I had not stripped the child, and therefore had failed in determining the cause. That will not likely occur to me again. Children should be examined at regular intervals, of every six months. A young doctor needs to gain the reputation of being careful and painstaking. When you once gain a reputation of doing this kind of work, you will be surprised how soon you will be specializing. Loose methods never take the place of scientific study. Do not neglect to point out all the possible complications that may arise during the treatment of a case.

Regarding the education of the child, physical and mental, medical men should be superior on questions of sociology to the majority of people, and the physician should know something about the mental calibre of the child under his care, in order to instruct and direct the parents accordingly. The forced educating process now going on in the large cities, is very unfortunate, and a great deal of the difficulty certain children experience in keeping up with their classes, is due to adenoids, bad sight, improper digestion, or wretched housing at home. You must talk frequently with the parents, before deciding whether or not a child can be expected to keep up with the rest of the class, and explain to the parents fully what must be done by you, as their physician, to make the child normal. The educated physician alone, is the man to handle the growing child's education. I used to think my duty was wholly done, when I wrote a prescription for a special ailment about which I was consulted. I have long since learned differently.

Always remember when a new patient comes to see you, that a new avenue has been opened, a new world for your entrance and cultivation, and this by some kind friend interested in your behalf. Make yourself worthy of the trust and responsibility. Your horizon is enlarging. You must frequently take charge of the ventilation of the houses, as well as the moral atmosphere of the home, as this is learning the art of medicine, while the science of medicine you will master in school.

Personal enthusiasm and thorough equipment, point the way to health, your art will make you the apostle of health.

This is the art, and you will be amply repaid, if you begin with little things.

OTITIS MEDIA AS A COMPLICATION IN THE ACUTE DISEASES OF CHILDREN.*

By Robert L. Loughran, M. D.

INSTRUCTOR, DISEASES OF CHILDREN POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

While various theories may be advanced as to the causation of an acute inflammation of the middle ear following or accompanying some acute general disease, as to whether the infection is a local manifestation of the primary disease or is a direct extension from some other involved part, there is still so much doubt as to the existence of any specific organism to produce the various diseases to which children are susceptible, scarlet fever, measles, &c., and as to their ability to select any portion of the body as their chief basis of attack, that we are safe in relying on a simple explanation of the occurrence of an acute otitis media in the presence of any acute general disease where the mucous membrane of the naso-pharynx is constantly an accompanying symptom.

An infection of the middle ear may be produced in several ways; through the external auditory canal after the tympanic membrane has been opened, either spontaneously or artificially through the lymph and blood vessels, from the cranial cavity, by means of the facial canal, labyrinth and petro-squamous suture, and lastly by the route of the Eustachian canal directly from the naso-pharynx, either by the forcible introduction of infectious material through coughing, &c., or by superficial transmission through extension of infective congestion of the mucous membrane of the naso-pharynx. It is by the latter means that we may conclude that all infection of the middle ear occurs, when associated with diseases in which inflammation of the naso-pharynx is always present.

---

*Read before the Alumni Association of the New York Post-Graduate Medical School and Hospital, March 10, 1908.

The anatomy of the parts involved in such a condition may be briefly discussed. The Eustachian canal, the means of communication between the middle ear and the naso-pharynx, is a patent tube passing from the lateral walls of the naso-pharynx at a rather acute angle backward, upward and outward and opening by a funnel-shaped orifice into the middle ear. Its mucous membrane is continuous with and identical to that of the naso-pharynx and middle ear and while its walls are in apposition normally, except in the act of swallowing, it is easily sufficiently extensible to allow foreign material to be introduced through it. There is therefore a direct means of communication which is made more complete in infancy and childhood by the fact that the angle of connection between the tube and the lateral wall of the naso-pharynx is much less acute than in adults, the direction of the tube is not so sharply upward and backward, the length is less and the patency is more complete, the walls not being in such close apposition. Both the naso-pharyngeal and tympanic orifices are larger. Further than this there is present in children the easily susceptible lymphoid tissue in the naso-pharynx. The length and patency of the tube give a less obstructed route for the passage of infection to the middle ear from the naso-pharynx and the lymphoid tissue, when hypertrophied, and diseased, becomes an excellent medium for the growth of pathogenic bacteria and gives an added tendency to susceptibility to infection when any exciting cause is introduced.

The acute diseases of children in which an acute infection of the mucous membrane of the naso-pharynx is always present, and in which we may expect and should always be on the lookout for acute middle ear infection and its sequelae as a complication are scarlet fever, measles, grippe, acute naso-pharyngitis and its various manifestations as tonsilitis, &c., whooping cough, diphtheria and mumps. All of these have as an early symptom an acute congestion and infection of the mucous membrane of the naso-pharynx in which a secondary acute otitis media may easily and rapidly develop by simple extension.

In scarlet fever, statistics go to show that otitis and its complications follow in anywhere from five to thirty-three per cent of cases. The pharyngeal symptom is always early, coming on in many cases several days before the appearance of the rash. The otitis may occur simultaneously or within two or three days depending on the rapidity of the involvement of the Eustachian tube. When it occurs later in the disease, it may be considered as an extension from a subsequent infection, that accompanying the onset of the disease not having been sufficient to have extended through the tube. In measles there is the same method of involvement and in about the same proportion of cases, the difference being that, as a rule, the otitis comes on later in the disease, due probably to the fact that the throat involvement is not so pronounced in the beginning and that it is only after the disease has sufficiently debilitated the general system does the mucous membrane of the middle ear and tube become susceptible to infection. When otitis occurs early, it is due to an unusual virulence of the throat complication and a corresponding extension to the adjacent mucous membrane. The same may be said of whooping cough, mumps and the various forms of acute naso-pharyngeal infection and pneumonia. In the latter case it is believed by some that we can have a primary involvement of the middle ear, but this condition as not accompanying the acute diseases of children is not to be mentioned here.

Grippe has of recent years come to be considered as the chief cause of middle ear disturbance not only in children but in adults as well, and along with scarlet fever it may be placed in a special class as regards the severity of the onset and the liability of destructive sequelae. The otitis develops early in the disease, and in many cases may be considered as the chief lesion. Many cases are seen where within an hour or so of the beginning of the disease, or even before the symptoms of grippe are noticed, pain develops in the middle ear and otoscopic examination shows the characteristic congestion and bulging drum. It frequently happens that the general symptoms are so mild as compared to those indicating involvement of the middle ear that the latter could easily be considered as the primary and even the only condition.

Acute otitis media, while not always present, is so frequently associated with the different acute diseases of children, is so liable to result in serious complications and is so apt to be overlooked in the general severity of the disease until it makes itself manifest by the acuteness of the pain or the appearance of the discharge from the auditory canal, the possibility of its occurrence in any or every case of illness in children should be constantly kept in mind and watched for. The condition of the middle ear should be as constantly observed and noted as is the tongue and throat and the range of temperature, for it is not to be forgotten that a well developed and serious case of otitis may occur without sufficient symptoms to attract attention to the ear, for while the chief symptom, pain, is generally present, it often happens that inability to indicate it or the severity of the general disease causes it to be overlooked, for the secondary symptom, appearance of the discharge, may be late in occurring, either on account of a resistant drum or because the serous or purulent fluid accompanying the infection has found an easier means of exit into the large cells of the mastoid bone. I therefore repeat that the ear should be kept under as constant observation in children, and that too in health as well as in illness, as is the condition of the tongue or the temperature, both of which are in many families almost an hourly occurrence, and that too without the suggestion of the physician.

The symptoms which indicate the involvement of the middle ear secondary to an acute disease in childhood are more pronounced as a rule than when appearing independently or in adults. This is especially so in scarlet fever and grippe. The invasion is sharp, the period of congestion is brief and the development of fluid rapidly follows, so much so that we can almost be sure that when we have enough congestion to give the drum membrane the appearance of redness we have already a developing serous condition which within a few hours will be sufficient to produce bulging. Likewise the fluid is prone to become rapidly purulent so that when the drum membrane is opened at the first sign of bulging the fluid is found to be already turbid. It is also to be frequently noticed that after the drum is opened the acuteness of the infection immediately involves the membrane and we have an extensive necrosis of this tissue with a resulting gaping opening, to be seen best after the edema has somewhat subsided. Another condition to be frequently noticed in the first stages is the development on the outer surface of the drum membrane and even on the adjacent canal wall of what we may call a bleb or blood blister, not necessarily connected with the fluid in the middle ear. Also cases present themselves where the drum membrane, while bulging, has a white lusterless appearance. This is but another evidence of the severity of the infection and is the result of the rapid desqumation of the superficial epithelial layer.

Pain is as a rule severe, but this may not appear as a pronounced symptom, either because the child is too young to give evidence of it or it may be masked in the general feeling of pain and discomfort. It may however be absent, and this fact is to be remembered. Temperature as a symptom of ear involvement is not to be absolutely relied upon. For while it is probably certain that every case of extension of infection to the middle ear is accompanied by a rise of temperature, its addition to a temperature already present as a result of general absorption may not be sufficient to indicate the cause. Furthermore the rise of temperature indicating the beginning of an otitis may be of short duration, it having subsided to some extent with the development of fluid, and so be overlooked either on account of its being thought to be a rise referable to the general infection or to its having occurred between the times of taking the temperature. Spontaneous rupture of the drum membrane may not occur, even with an excessive amount of bulging or it may occur only after the otitis is well established. We must therefore not depend on the cardinal symptoms for the diagnosis of otitis when complicating an acute general disease, excepting only as they include those shown by an otoscopic examination of the drum membrane, such an examination being a daily routine in the treatment of the case.

With the fact in mind that in these cases congestion almost invariably results in exudation, and that rapidly, opening of the drum membrane seems to be justifiable in the presence of congestion even without the added indication of bulging, but when bulging has taken place the operation must be immediately done, and freely, to allow as much drainage as possible with the idea of lessening the congestion and so minimizing the possibility of extension into the mastoid bone. For it is a fact not often referred to that many temporal bones of children are so constructed anatomically that the antrum is but a recess of the middle ear cavity, the auditus being but a broad passage-way, and involvement of the antrum is a result of but a moderate extension of the infection in the mucous membrane of the tympanic cavity.

While the infection within the middle ear is severe when accompanying the acute infectious diseases and is prone to result in extensive necrosis not only of the structures of the tympanic cavity but of the whole substance of the mastoid and the surrounding tissues as well, our greatest hope of retarding its advance is early and free opening and drainage. Should the infection continue to advance it results in mastoiditis and this should be attacked by opening the mastoid at the first appearance of symptoms, for while the various complications, sinus thrombosis, brain abscess, meningitis, &c., are always a reasonable possibility in children, they are especially so in any condition where the advancing infection is severe, rapid and prone to extend quickly into the deeper tissues.

Of course, not all cases go on to mastoiditis and many recover with only the discomfort of a discharging ear which within a few weeks is healed with or without disturbance of hearing, depending on the extent of the necrosis, but other complications may occur which should be borne in mind in giving a prognosis.

Cases are constantly met with in adults which present the condition of what we call a chronic purulent otitis media or a residual otitis, depending on whether the ear is discharging or not, the symptoms being a foul smelling, thick discharge which at times is pronounced and again absent at intervals of from a few days to several months or even a year, the discharge appearing with the advent of damp weather or following a naso-pharyngeal infection. The amount is large or small depending on the extent of the suppurating area. The drum membrane is found to be to a great extent destroyed, the remnants being so cicatrized as to be almost unrecognizable, and the presenting mucous membrane edematous and irregular. Hearing will be found to be deficient. Examination with a probe will evidence the presence of bare and roughened bone either above or to the rear of the drum perforation. Questioning as to the cause will almost invariably bring out the history that the trouble began in childhood and appeared either with or shortly following some infectious disease. These are cases which began with scarlet fever, measles or grippe, continued acutely for awhile and then either developed a mastoiditis which subsided on account of sufficient drainage or remained an infection of the middle ear alone. They went on to a subacute and later a chronic stage which continued with intervals of remission up to adult life. With the primary otitis, extensive destruction of tissue followed and this advanced slowly until the bone itself became involved and a chronic ostitis of the ossicles or walls of the tympanic cavity resulted. This slowly advancing, the chief symptom being the foul smelling discharge and the diminished hearing, finally resulted in adult life in what we term a chronic purulent otitis. These cases can in the majority of instances be relieved as far as the discharge and the possibility of a brain abscess and meningitis are concerned, by a radical operation and the removal of the necrotic bone but the hearing is destroyed or damaged for all time.

Assurance of prevention of otitis in acute infectious diseases is not possible. It is one of the probable complications and prophylaxis may be summed up in preventing its disastrous results as far as possible. This necessitates on the part of every physician, professing to treat children, the ability to examine an ear intelligently and the knowledge of the symptoms which indicate its involvement.

62 West 52nd Street.

Sources of Error in the Laboratory Diagnosis of Diphtheria.—Dr. Hibbert W. Hill (Am. Pub. Health Assoc. Meeting, Oct., 1907), of Minneapolis, submitted what was actual proof and what must be assumed to make a bacteriological diagnosis of diphtheria logical and a practical success. First, the finding of diphtheria bacilli in a culture taken by itself proved nothing except their presence in the culture. Granting that the culture was properly taken the finding of bacilli proved their presence in the throat, etc., from which the culture was taken, nothing more. Third, the presence of diphtheria bacilli in the throat plus appropriate symptoms justified the assumption that the patient had the disease, the evidence being that from 98 to 99 per cent. of all patients showing this condition had the disease. Fourth, the presence of diphtheria bacilli in the throat, without symptoms, required further data as to exposure. If a clear history of the absence of exposure could be obtained, it was legitimate to assume that the diphtheria bacilli found were likely to be non-virulent, the evidence being that eighty per cent. of such cases were not virulent. If exposure was established, a legitimate assumption was that diphtheria bacilli were virulent, and therefore, when present, might infect others who would come down with the disease in a short time, the evidence being that the infection obtained from a clinical case was almost invariable. Fifth, failure to find diphtheria bacilli in a culture was about 90 per cent. conclusive of their absence in the throat. If a second culture were taken, and also proved negative, the two consecutive negatives taken together afforded about 99 per cent. conclusive evidence. If two or three or four negatives were obtained, the absence of diphtheria bacilli was established with direct finality.—N. Y. Med. Record, Nov. 2, '07.

DIPHTHERIA; WITH SPECIAL REFERENCE TO ITS ONSET, AND ITS TREATMENT.*

By John F. Holmes, M. D.

VISITING PHYSICIAN ST. JOSEPH'S HOSPITAL.

In presenting this brief paper on diphtheria, the writer feels that although this disease has been much written about, and has been discussed at great length in meetings of this character, still the importance of the subject may serve as a reason for stating some of the more important facts which have been developed in regard to this disease and its treatment, with the hope of bringing out—in the course of discussion,—some of the clinical experiences of the members, which are sure to be helpful.

I will not attempt to cover the whole subject, but simply to emphasize the more important points in the onset, diagnosis and treatment of the three most common clinical varieties met with by the physician, as they have impressed me.

Definition. Diphtheria is a specific, infectious disease, characterized by a local fibrinous exudate, usually upon a mucous membrane; and by constitutional symptoms due to toxins produced at the site of the lesion. The Klebs-Loeffler bacillus is the etiological criterion by which true diphtheria is distinguished from all other forms of membranous inflammation. (Osler).

---

*Read before the Society of the Alumni of City (Charity) Hospital, New York, March 11th, 1908.

Etiology. The disease is endemic in large centres of population, and becomes epidemic at certain seasons. Diphtheria is highly contagious, and readily communicated from person to person. Mild diphtheria possesses so few subjective symptoms that it is often not detected or suspected even by intelligent people; and children affected with this form of diphtheria may communicate to those who are near them a malignant form of the disease.

Experiments have shown the Klebs-Loeffler bacillus to live for weeks and months; and to remain virulent in bits of dried membrane for periods varying from ten to twenty weeks. Upon a child's plaything they lived in a dark place for five months. The virulent bacilli have been found upon soiled bedding, or clothing of diphtheria patients; drinking cups, shoes, hair, slate pencils, etc. Virulent bacilli may be directly received from the exudate, or the discharges of diphtheria patients; from secretions of nose and throat of convalescent cases in which virulent bacilli persist; and from healthy throats of individuals who acquired the bacilli from being in contact with others having virulent germs on their persons or clothing. The bacilli may live and develop for days or weeks in the throat without causing any lesion. The diphtheritic virus is so subtle, and its vitality and power of propagation so great, that it seems almost impossible to eradicate it from large cities.

Diphtheria is infrequent in children under the age of six months. Most of the cases occur between the ages of three and ten years. The disease is rare after the age of forty. A number of cases are on record to show that the disease does occur in the newly born infant.

There is often considerable apparent discrepancy between the clinical appearances, and the bacteriological fiindings; for a simple sore throat may—if a culture be taken—show the presence of the Loeffler bacillus; while a membranous angina which is clinically diagnosed as *diphtheria,* will often bacteriologically fail to show any diphtheria bacilli. To these latter affections has been applied the term pseudo-diphtheria, or diphtheroid angina. It will not be my aim to discuss the bacteriology of these non-diphtheritic anginas in detail, but simply to mention the fact, and the acute infectious diseases with which a diphtheroid angina is associated. While diphtheria may be associated with scarlet fever if the disease is prevalent; in the large majority of cases the angina is due to the streptococcus.

Measles, whooping cough, and typhoid fever may be complicated by a membranous angina, but in the large majority of cases the Klebs-Loeffler bacillus is not present. They are generally due to streptococcus, as a general streptococcus infection often proves fatal in this group of cases.

Another form of pseudo-diphtheria is Vincent's Angina attended with superficial and deep necrosis of tissue.

In all these cases of pseudo-diphtheritic angina, or—according to Caillé—"in all acute throat infections in children, attended with fever and swelling of the lymph nodes, or membranous rhinitis without fever, or hoarseness with progressive stenosis, the physician will be wise to look upon them as suspicious of diphtheria, and treat them accordingly."

The culture test should be regarded as a confirmative one, and nothing more.

The essential lesions of diphtheria consist not in the production of a membrane, but in certain acute degenerative changes in the cells of the body caused by the diphtheria toxins. These changes are seen particularly in the epithelial cells of the affected mucous membranes, together with hemorrhages due to changes in the blood vessels, and possibly in the blood itself. The lesions are found in the lymph nodes, spleen, heart muscle, epithelium of the kidneys, liver cells, peripheral nerves, and in the lungs.

Diphtheria is usually attended with pronounced leucocytosis. The increase of leucocytes begins a few hours after the infection, often delayed in susceptible cases with severe infection. Ewing found that in favorable cases the leucocytosis is greatest at the climax of the disease. A high degree of leucocytosis indicates a pronounced reaction against a severe infection; but is not necessarily an unfavorable prognostic sign. Slight leucocytosis usually indicates a mild infection.

Holt says: "The incubation of diphtheria is *short.* In cases in which it could be definitely traced it has been between two and five days; shorter when disease is epidemic, or when patient is very susceptible, when the conditions in the mucous membranes are favorable, and when the type is virulent."

The *onset* is often very insidious, (but it may be sudden), and in mild cases the child may not feel ill enough to go to bed. In very young children the disease may start with a convulsion. Usually there is chilliness, a rather moderate fever, 101°-102° F., rarely reaching 103° or 104° F., except in the most severe cases; some pain in the back and limbs, occasionally vomiting and some dysphagia.

It is this low grade of fever which is very characteristic of true diphtheria, and serves to differentiate it from a simple or follicular tonsillitis. However, it should be remembered as Jacobi pointed out over thirty years ago, no amount of experience will enable the physician to distinguish between the two affections. What looks like a case of follicular tonsillitis to-day, may be a virulent diphtheria to-morrow. One is far safer in regarding every case as suspicious; for atypical cases of true diphtheria are very common. I can not emphasize this point too strongly, and I repeat here that the specific treatment must be given before the microscopical diagnosis is made.

I will confine myself to a description of the three chief forms met with clinically, viz.:

1—Pharyngeal diphtheria.
2—Nasal "
3—Laryngeal "

Pharyngeal Diphtheria. By the time we see a case there is usually some exudate present on the tonsils; the muous membrane of the pharynx is congested; the tonsils are somewhat enlarged, and the glands of the neck are swollen. By the *third* day the membrane has covered the tonsils and pillars of the fauces. It may spread to the uvula which is oedematous, or to the posterior wall of the pharynx. The cervical glands are still further enlarged and tender.

The temperature in a case of moderate severity is not high, usually from 101° to 103°—pulse 100 to 120.

The membrane is at first grayish white in color, then it changes to a dirty gray, often to a yellowish white. It is firmly adherent, and if removed leaves a raw bleeding surface.

In a case of moderate severity the general condition is usually good, as is the outlook. Constitutional depression is slight, about the fifth or sixth day the membrane begins to separate, the swelling of the glands subsides, and there is an amelioration of all the symptoms; and in this type the throat is usually clear by the seventh day to the tenth day, when convalescence begins.

The clinically *atypical forms* are common and I will quote Koplik's classification.

(a) There may be no local manifestation of membrane, but a simple catarrhal angina associated sometimes with a croupy cough. The detection of the Klebs-Loeffler bacillus can alone—in these cases—determine the diagnosis. Such cases are of great moment, inasmuch as they may communicate the more severe disease to other children.

(b) There are cases in which the tonsils are covered by a pultaceous exudate, not a consistent membrane

(c) Cases presenting a punctate form of membrane, isolated, and usually on the surface of the tonsils.

(d) Cases which begin and often run their entire course with the local picture of a typical lacunar amygdalitis. They may be mild, and the local exudate may not extend, but in other cases there are rapid development of membrane, and extension of the disease to the pharynx and the nose, with severe septic and constitutional symptoms.

To this I would add that a great many observers have demonstrated bacteriologically, the existence of true diphtheria of a severe type without membrane.

These cases are usually in persons who have been exposed to diphtheria in the family, and hence their true nature suspected.

Nasal Diphtheria, or membranous rhinitis occurs usually in children, and while the nares are occluded by a thick membrane, there is, in uncomplicated cases, an entire absence of constitutional symptoms, or they are very slight. This is the rule; but occasionally nasal diphtheria may present a most malignant type. This is usually due however to an extension of the process to the naso-pharynx, or a mixed infection with a streptococcus usually. The symptoms of this type are a profuse irritating discharge from the nose, which causes excoriation, great glandular enlargement, and a profound toxaemia with high temperatures, and is often fatal.

Laryngeal Diphtheria. This form may occur primarily; in the majority of cases however it is secondary to diphtheria occurring elsewhere,—the throat, nose, or both. Whether primary or secondary the first thing noted is that the child becomes hoarse, and revelops the characteristic laryngeal cough. Unless complicated there may be few other symptoms.

The second stage is marked by the development of pseudomembrane; this may proceed very rapidly, and within twenty-four hours there may be symptoms of laryngeal stenosis. The voice and cough are quite characteristic. The cough becomes paroxysmal. During the paroxysm the face is cyanotic, the eyes reddened and bulging, veins dilated, forehead covered with sweat. Soon there is complete aphonia. The stenosis rapidly increases, there is retraction in the supraclavicular region and epigastrium. All the accessory muscles of respiration are called into play. The paroxysms increase, the cyanosis is more marked, and the child presents a desperate picture. This if unrelieved in a severe case terminates in asphyxia. Fortunately, most cases under early antitoxin treatment clear up before this stage is reached.

The most serious complications are broncho-pneumonia and acute nephritis.

The most serious sequelae are secondary anaemia and peripheral neuritis, with accompanying paralysis of the muscles of deglutition, sometimes of the ocular muscles, and in many cases the lower extremities.

Prophylaxis. 1st. As an unhealthy condition of the mucous membranes of the nose and throat present a favorable soil for the entrance of the Loeffler bacilli, everything possible should be done toward promoting a healthy condition of these parts. Hypertrophied tonsils and adenoids should be removed, carious teeth should receive the attention of a dentist, and children should be instructed early in the care of the mouth and teeth.

2nd. Regulation of hygiene is a very important factor in prophylaxis. Children, when possible, ought to sleep alone and in well ventilated rooms.

Everything which tends to improve the health in general will, of course, increase the resistance to this as well as other infectious diseases.

Poor sanitary conditions, while they are probably not directly the cause of outbreaks of this disease, are certainly a potent predisposing factor.

Defective plumbing, permitting escape of sewer air, with its consequent poisoning, and poor ventilation plus an unhealthy mucous membrane, furnish an ideal soil for the invasion of the Loeffler bacillus.

3rd. Isolation of all suspected cases, until a culture proves their true nature, and a rigid quarantine, with proper disinfection, until bacteriological examination fails to show the presence of diphtheria bacilli, are measures which very materially prevent the spread of this disease. I might speak here of the excellent work of the New York City Health Department in its medical inspection of schools. Here the rule is to exclude from attendance at school, all cases of "sore throat" or marked nasal discharge,—whether any exudate be present or not,—until proven by cultures to be non-diphtheritic inflammations. This—to my mind—does much to stamp out one of the most frequent foci of epidemics, in a thickly populated community like ours.

Immunization. The New York City Health Department advises 300 units of diphtheria antitoxin for a child to 500 units for an adult as an immunizing dose, depending on age of the patient. This may be repeated in a few days.

Dr. Kerley advises that never less than 1,000 units should be given for this purpose, without regard to the age of the child.

Prognosis in all cases is uncertain, especially in markedly septic cases attended with broncho-pneumonia; or heart failure may occur at any stage of the disease or even during convalescence. This may occur in—what appear to be—mild cases.

Mortality is greatest in chlldren under two years of age. But prognosis has been greatly changed since antitoxin has come into use.

The statistics of the Boston City Hospital show that before antitoxin treatment was used, the mortality was 50 %. Since its use, in a series of 4,500 cases the mortality has been reduced practically to 10%.

The most important measure of treatment is the early use of diphtheria antitoxin in full doses.

Dr. Northrup says there is not the slightest ground for believing that a good preparation of antitoxin given under proper conditions of cleanliness, has been the means of causing a fatal result. He advises from 2,000 to 3,000 units for a child of over a year in an ordinary case of diphtheria. From 3,000 to 5,000 units for severe cases, and for all laryngeal cases of any age. For a child under one year, in an ordinary case, 1,500 to 2,000 units. These doses to be repeated in twelve hours or less if symptoms are increasing.

Dr. Kerley states that he rarely gives less than 5,000 units at the first injection. This dose to be repeated eight or twelve hours later if their is no extension of the membrane, or if there is no change in its appearance. In laryngeal cases 7,000 units for the initial dose followed by 5,000 units in eight hours, if required. If the membrane is loosening, and there is general improvement in the appearance of the throat, another injection may be postponed for twenty-four hours.

At one of the large hospitals in this city, where some thousands of cases of diphtheria are treated annually, the initial dose of antitoxin is based upon:

I. Duration of the disease.

II. Location and extent of the membrane.

III. Character of the membrane.

IV. Amount of toxaemia present, as evidenced by the condition of the patient.

The initial dose as regulated by location of membrane is as follows:

Tonsillar cases	5,000	units
Tonsils, uvula and soft palate	10,000	"
Nasal and naso-pharyngeal	12,000	"
Croup cases	10,000	"

Indications for repeating the dose. 1st, spreading of membrane; 2nd, no improvement in twenty-four hours.

Third or fourth doses at intervals of twelve hours. Total dosage carried up to 35,000 to 40,000 units if required.

Biggs and Guerard after a review of all the statistics and opinions published since the beginning of antitoxin treatment say: "It matters not from what point of view the subject is regarded, if the evidence now at hand is properly weighed, but one conclusion is, or can be reached,—whether we consider the percentage of mortality from diphtheria and croup in cities as a whole, or in hospitals, or in private practice; or whether we we take the absolute mortality for all the cities in Germany whose population is over 15,000, and all the cities in France whose population is over 20,000; or the absolute mortality for New York City, or for the great hospitals in France, Germany and Austria; or whether we consider only the most fatal cases of diphtheria, the laryngeal and operative cases; or wehther we study the question with relation to the day of the disease on which treatment is commenced, or the age of the patient treated; it matters not how the subject is regarded or how it is turned for the purpose of comparison with previous results, the conclusion reached is always the same, namely, there has been an average reduction of mortality from the use of antitoxin in the treatment of diphtheria of not less than fifty per cent., and under the most favorable conditions a reduction to one-quarter, or even less, of the previous death rate. This has occurred not in one city at one particular time, but in many cities, in different countries at different seasons of the year, and always in conjunction with the introduction of antitoxin serum and proportionate to the extent of its use."

The importance of early treatment is set forth in a table of statistics prepared by Biggs and Guerard, showing the day of the disease upon which treatment was begun.

Day.	Number of cases.	Mortality percentage.
1st	1,415	3.5
2nd	2,640	8.0
3rd	2,340	12.
4th	1,458	23.6
5th	1,912	35.

Following the use of antitoxin certain rashes resembling urticaria or erythema occasionally appear; also in some cases pain about the hips, knees, wrists and shoulders, attended with slight redness and swelling.

Sometimes muscular and neuralgic pains are noted. The various unpleasant symptoms developing after the use of this remedy are now known to be due to horse serum, and not to the antitoxin. The greater concentration of the antitoxin has materially lessened its disagreeable effects. In croup cases an injection should be given without a moment's delay. In the antitoxin treatment of these cases the mortality has been reduced, 1st by its effect upon operated cases, and 2nd by decreasing the number of cases which come to operation. The death rate has fallen from 70% to 16%.

Intubation. I shall not undertake to go over the history or to describe the techinque of this valuable operation which is described in all text books, but will only refer to the indications for its performance, viz.: supra-clavicular, sub-sternal, and lateral thoracic retractions; dilatation of the alae nasi; and marked restlessness with or without a cyanotic hue of the skin.

The operation should never be delayed until the patient is exhausted, as the probability of recovery is very much increased by early operation.

In regard to some recently reported cases of sudden death following the use of antitoxin, the writer would refer to a letter written to the editor of the Journal of the American Medical Association which explains the probable cause of these fatalities.

(The attention of the Surgeon-General of the U. S. Public Health and Marine-Hospital Service was called to the three deaths following the use of diphtheria antitoxin, and he was asked if any investigation of the antitoxin used had been made by the Service. The following is Surgeon-General Wyman's reply):

WASHINGTON, D. C., Jan. 30, 1908.

To the Editor.—I desire to acknowledge the receipt of your letter of January 25, referring to recent reports appearing in THE JOURNAL of fatalities following the use of diphtheria antitoxin, inclosing report of another case from Dr. E. L. Boone, New Martinsville, W. Va., and requesting to be informed if the service has made any investigations in relation thereto.

In reply, I have to state that samples of serum of the same laboratory number and issued by the same manufacturer were received from Dr. Wiley of Norristown, Pa., who reported the fatal case in THE JOURNAL, Jan. 4, 1908. These samples were examined in the Hygienic Laboratory and found to be sterile, so far as bacterial contamination is concerned, and further, to contain no toxic substance for guinea-pigs or mice. Some of this serum was injected into guinea-pigs and subcutaneously into mice. Steps have also been taken to secure samples of the serum used in the cases reported from Cuba, N. Y., and New Martinsville, W. Va.

It is evident, from the examinations made thus far, that this serum was not contaminated, and this case in all probability is an example in man of hypersusceptibility to horse serum which can easily be induced in animals by spaced injections of horse serum. The phenomenon of hypersusceptibility has received very careful study in the Hygienic Laboratory during the past two years in connection with the examination of serum provided for in the law of July 1, 1902, and it can positively be stated that diphtheria antitoxin plays no part in the poisonous action of horse serum, and is itself harmless. The detailed results of these investigations have been published in Hygienic Laboratory Bulletins Nos. 29 and 36.

The symptoms following spaced injections of horse serum in animals are very characteristic, and indicate that the poisonous principle has a powerful influence on the respiratory centers. Paralysis of the respiratory centers is shown by the fact that respiration in fatal cases ceases long before the heart stops beating. Similar symptoms were reported in the human cases under consideration, and the patients were in all probability sensitized, in some as yet unknown way to horse serum. It is significant that two of the patients reported were afflicted with asthma, which disease is regarded as a neurosis. The results in these cases, and one other, of which the bureau has knowledge, may furnish important clinical information to the effect that antitoxin should not be used, or only with caution, in persons with asthma, or subject to asthmatic attacks.

WALTER WYMAN, Surgeon-General.

Other measures of treatment consist mainly in keeping the sick room very quiet, well ventilated and shaded. The temperature should be 70° F. Patient should not be excited or allowed to make any exertion.

If there is extreme restlessness with weak heart action small doses of Dover's Powder or of morphine may be required. For irregular or intermittent heart action strophanthus, strychnia sulphate gr. 1-80 to gr. 1-50, also whiskey or brandy are indicated.

Early stimulation in proper doses is indicated in all cases. The septic cases do best with large doses of alcoholic stimulants; ℥iii to ℥ix in twenty-four hours. The nose and throat should be irrigated as often as necessary to free them from the foul secretions; but this must be done without exertion or excitement on the part of the patient.

Normal salt solution, lime water, boracic acid or solution bichloride of mercury (1-10000) are as good as any. As much nutritious food as the patient can take with comfort, and can digest. Milk should be the principal food, and in addition may give Kumyss, egg-nog, custard, cocoa, concentrated beef preparations, gruel, etc. In some cases the stomach will reject all food, and we will be obliged to resort to rectal alimentation.

Post diphtheritic paralysis is to be treated with strychnia sulphat in large doses and continued over a long period, also by the use of the Faradic current.

The following case which occurred in my own practice is interesting. I was called on April 9th to see a little boy aged 7 years. On the previous day he had attended school and afterward played on the street with his comrades. He went to bed feeling about as well as usual and in the middle of the night woke np with croupy cough, difficult breathing, and some fever. After several coughing spells he coughed up a complete cast of the larynx. I saw him for the first time at 11 a. m. He was then lying on the bed in what appeared to be a deep sleep. Respirations 30 per minute and snoring in character. Pulse 120—temperature 104 2-5. He could be aroused with difficulty, but immediately relapsed into stupor. A thin brownish yellow fluid flowed from the nostrils. Breathing seemed to be entirely through the mouth. No membrane visible in the nostrils.

Examination of the throat showed the tonsils and adjoining mucous membrane greatly swollen and red. There was light yellowish membrane in punctate form dotted over entire surface of both tonsils only. The case was diagnosed as septic diphtheria, and 5,000 units of antitoxin were injected as quickly as we could get it. Eight hours later 5,000 were again injected as the patient showed no improvement. Membrane was spread out in an even layer over whole throat, had changed in appearance, being thicker and of grayish color. It seemed to have spread along the posterior wall of the pharynx. Temperature had risen to 105 3-5, pulse very frequent.

On the following day (second of the disease) as the conditions did not seem much improved, three injections of 5,000 units each were given at intervals of six hours. Laryngeal stenosis had not been urgent from the first.

On the third day of the illness laryngeal symptoms became more marked and about 6 p. m. it suddenly became necessary to intubate, which completely relieved the stenosis. This did not return. Tube removed 3 days after; 10,000 units of antitoxin were administered that day. On the fourth day of the illness although there seemed to be general improvement, the condition of the nose and throat seemed to warrant the use of more antitoxin, and 5,000 units were injected.

On the fifth day of the illness the temperature was 101° in the morning, and 99° in the evening. Pulse had improved in proportion. Patient's facial expression had greatly changed for the better, and he continued to improve in every way until culture from his throat showed no bacilli on the seventeenth day after the beginning of his sickness.

No antitoxin rash developed, nor any paralysis, although the heart's action was extremely weak for a number of days.

This boy became well enough to return to school and two or three weeks afterward developed scarlet fever which ran a regular course attended with severe nephritis, and terminating in abundant desquamation. He finally recovered completely and is well and hearty to-day.

1051 Boston Road.

SOME CLINICAL FEATURES OF TRACHOMA.*

By Herbert Wright Wootton, M. D.

ASSISTANT SURGEON, MANHATTAN EYE, EAR AND THROAT HOSPITAL; OPHTHALMOLOGIST, DEPARTMENT OF HEALTH.
NEW YORK CITY.

At present, trachoma is essentially a chronic affection, both in this country and in Europe. Individual cases may at times exhibit acute exacerbations, during which secretion will be present, accompanied perhaps by oedema of the lids and even by corneal complications and, as will hereafter be more fully noted, the incipient stage of the disease may be styled sub-acute. Still, exacerbations are relatively infrequent, the incipient stage is of comparatively short duration and the greater part of the long and tedious course of trachoma is unaccompanied by acute inflammatory symptoms. In its present chronic form, the picture of the disease differs greatly from that which it presented in the early part of the nineteenth century, at which time it first excited considerable attention in Europe. Trachoma had undoubtedly existed in Europe before this period, but it was about this time that it assumed a virulent epidemic character, marked by intense oedema of the lids, profuse secretion and corneal complications, and resembled indeed more closely gonorrhoeal ophthalmia than it did the trachoma of the present day. It was intensely contagious and disseminated itself with the greatest rapidity and its ravages were distressingly severe. Thus, we read that, during the year 1818, 5,000 soldiers in the English army became blind from this diease. In the Prussian army, from 1813 to 1817, over 20,000 men were attacked with it. When trachoma made its appearance on ship-board, particularly on slave ships, its ravages were, perhaps, most extensive, and cases are recorded in which vessels were lost because no member of the crew retained vision sufficient for purposes of navigation. Gradually, the acute epidemic period of the disease subsided and, with the re-appearance of trachoma as an endemic affection, it lost, for the most part, its acute characteristics and, with these, its *intensely* contagious nature. That trachoma is still contagious by inoculation is, unfortunately, only too well known, but the term "intensely contagious" can hardly be applied to it except during acute exacerbations, for it may exist in one eye for a considerable period without infecting the other, an upper or lower lid may present appearances of trachoma while its fellow is normal and, furthermore, the inoculation of a healthy eye with trachomatous material does not always produce trachoma.

---

*Read before the Society of Medical Inspectors, Dept. of Health, N. Y., Feb. 12th, 1908.

The incipient stage of the trachoma of the present day is rarely described in text books, for the reason that it is rarely observed. In the trachoma service of the department of health, twelve cases have occurred among the physicians and nurses, and their appearance has been very uniform. At its commencement, the disease resembles a sub-acute conjunctivitis and both the ocular and palpebral conjunctiva are injected. Slight ptosis is apt to appear early. Such secretion as is present is mostly watery in character. It sometimes happens that a fairly well-marked keratitis is present at this stage and, in consequence, photophobia will be added and lachrymation will be increased. For two or three weeks the palpebral conjunctiva merely appears hypertrophic and follicles are not discoverable. Gradually the irritative stage subsides, lachrymation ceases, the injection of the ocular conjunctiva disappears, the hypertrophy of the palpebral conjunctiva diminishes and follicles make their appearance, at first few in number and situated as a rule in the conjunctiva of the lower lid. The diagnosis of these incipient cases, in the absence of a direct history of infection may, at first sight, seem difficult. In reality they present but little difficulty, unless we do not happen to think of trachoma and dismiss the cases hurriedly without giving them sufficient consideration. Incipient trachoma is practically always unilateral and remains unilateral for a considerable period. Conjunctivitis of the catarrhal type, attacking first one eye, involves the other after a few days or even after a few hours, due of course to the greater virulence of its poison. What other form of persistently unilateral conjunctivitis does exist besides trachoma? None that at all resembles the sub-acute affection just described, except that caused by obstruction of the lachrymal passages, and this can always be distinguished by the regurgitation of tears produced by pressure upon the lachrymal sac. If the case be one of trachoma, ptosis, when present, aids greatly in the diagnosis, but the principal feature upon which reliance should be placed is its persistently unilateral character. A sub-acute conjunctivitis which has involved but one eye for a period of two weeks, if not due to lachrymal obstruction, is almost certainly trachoma.

In the succeeding stage of the disease, the stage in which it is most frequently first seen, and the stage to which the term chronic can most properly be applied, the positive diagnosis rests upon the co-existence of two factors, namely, the presence of follicles and the presence of hypertrophy of the conjunctiva hypertrophy being significant of follicles deeply seated beneath the conjunctival surface. Follicles associated with hypertrophy constitute the clinical picture of the disease we call trachoma and, when these two conditions coexist, its diagnosis does not admit of dispute. Unfortunately, in the early period of the chronic stage, the follicles may be, clinically at least, entirely superficial and hypertrophy will consequently, not be satisfactorily demonstrable. In such cases, a positive diagnosis may be exceedingly difficult or, perhaps, impossible.

Is there a chronic follicular conjunctivitis distinct from trachoma? Are the superficial follicles, which sometimes are not succeeded by hypertrophy and the cicatricial stage, to be regarded as an independent disease or merely as mild or abortive types of the graver affection? Clinically, all deposits of lymphoid tissue in the conjunctiva are to be looked upon as pathological and, as the non-progressive follicles do not differ histologically from those that are found in undoubted trachoma, it might seem reasonable to regard both chronic follicular manifestations as one and the same disease. I am convinced, however, that such a classification would in no way aid us in our difficulties, for we should still be compelled to say, for clinical purposes, which were progressive and which were not and, furthermore, I am convinced that such a classification would be improper. We know that the appearance of lymphoid follicles may take place under various circumstances. Any agent causing acute inflammation may excite their growth. Thus they are seen in severe cases of acute catarrhal conjunctivitis and disappear entirely with its termination. They are also seen in the declining stage of gonorrhoeal conjunctivitis and do not, ordinarily at least, persist in the form of chronic trachoma. They are also sometimes observed in the conjunctivitis caused by atropin. In other words, follicles in the conjunctiva do not constitute a distinct disease; they are merely one manifestation of several pathological conditions. In this respect they are in no wise unique. An analogy is to be found in the croupous inflammation of the conjunctiva. Membranous exudation may accompany severe types of infection by the Koch-Weeks bacillus, and it is found in most cases of infection by the Loeffler bacillus, and in some of those of which the gonococcus or the streptococcus is the cause. Yet no one would think of classifying all membranous inflammations of the conjunctiva as varying grades of the same affection. Of course in this case, bacteriology has come to our aid and enabled us to make a more or less solid classification. This aid has so far been denied to us in the chronic follicular affections, which seem to be the despair of the bacteriologist. For the present, it seems to me proper to speak of two chronic follicular conditions, follicular conjunctivitis and trachoma, the one superficial and benign, the other deep and malignant. This being the case, how are we to determine if hypertrophy be not present, which superficial follicles will remain stationary and which will be complicated later by deeper infiltration? The answer to this question is that we cannot always do so. Most text books give certain rules to be followed in arriving at this conclusion but, in most cases, these rules fail in their practical application. The only safe way to determine the nature of a chronic follicular conjunctivitis unaccompanied by hypertrophy is by repeated examinations. Many authors state that superficial follicles situated only in the lower cul-de-sac and in parallel rows are not trachoma. In my opinion this statement is capable of but very limited application. Some such cases remain stationary or recede, but many others are subsequently associated with hypertrophy and pursue the typical course of trachoma. To conclude my views on this subject, when we have follicles associated with hypertrophy, we have the progressive form of follicular conjunctivitis we call trachoma, when no hypertrophy is present the case may be regarded as suspicious but a positive diagnosis cannot be made, except when the tarsus of the upper lid is involved.

The follicles of trachoma when situated somewhat beneath the surface of the conjunctiva appear as small rounded masses, apparently firm in consistency and somewhat less than a pin's head in diameter. When more superficially seated they appear larger and are of a lighter color, the so-called frog's spawn granulations. Both varieties, superficial and deep, hard and soft, are always to be found microscopically in any case of true trachoma but, clinically, one or the other variety may seem to predominate and so give its type to the individual case. Thus, one speaks of trachoma with small, hard follicles, or of trachoma with large, soft follicles, and this clinical distinction has its value, for the cases in which small hard follicles predominate are much more difficult to cure than those in which the follicles are large and soft. This is, of course, equivalent to saying that the more a case abounds in deeply seated follicles, the more rebellious it is to treatment. In the upper lid, the follicles or granules of trachoma often appear first as yellowish bodies deeply seated beneath the surface of the conjunctiva covering the tarsal cartilage. Here, although deep, they are very readily discernible, for loose submucous connective tissue does not exist in this situation and, in consequence, hypertrophic folds of conjunctiva do not hide the deeply seated follicles. The examination of the upper lid is of the utmost importance in the diagnosis of slight or doubtful cases, for deeply seated follicles are here most readily discernible and follicles deeply seated mean trachoma. For this reason, I think it can be positively stated that, while non-trachomatous follicles may exist in the lower lid, all follicles found in the substance of the conjunctiva covering the tarsal cartilage of the upper lid are those of true trachoma. One must not, however, mistake for trachoma granules the fine, pin-point papillary projections which are sometimes found studding the surface of the cartilage or fringing its margins. In regard to the distribution of the follicles of trachoma all four lids are usually involved by the time the case comes under observation. Clinically, the lower lids are usually first attacked and, as already stated, one eye may exhibit trachoma for a very long period without involvement of the other. Very rarely follicles will be found in an upper lid, while the lower lid will apparently be free from infection. The disease may also invade the ocular conjunctiva, in which situation the follicles are always of the superficial or soft variety. This invasion usually starts from the plica semilunaris, that is to say, from the region of the internal canthus, but I have also seen cases in which it began from above, extending from the superior cul-de-sac nearly as far as the cornea.

The hypertrophy of the conjunctiva which forms so essential a part of the symptomatology of trachoma is most readily observed in the lower lid. In the normal eye, the conjunctiva in this situation is perfectly smooth and flat, pinkish in color, especially towards the free border, gradually becoming paler as the fold of transition is reached, and the markings of the blood-vessels are distinctly visible. When hypertrophy takes place, these characteristics are changed. The membrane is obviously thicker. It assumes a duller hue, is thrown into folds and the markings of the blood-vessels are more or less obliterated. In the upper lid, hypertrophy is first observed at the lateral margins of the cartilage, in which situation the membrane assumes a dusky red color and gives to the tarsal margins a hypertrophic, finely granular, appearance. The hypertrophy of the conjunctiva of the upper lid increases its weight. On this account, ptosis is a frequent accompaniment of the hypertrophic stage. The ptosis which occurs early in the disease must be referred to other causes, possibly to paralysis of the unstriated elevator of the lid, the musculus palpebralis superior (Fuchs).

The duration of the stage which has just been described is very variable. It may last but a few months; it may continue for years. Later the follicles and hypertrophy gradually disappear and the stage of cicatrization commences. When the follicles have disappeared from the surface, the membrane often continues hypertrophic for a considerable period and presents a finely granular appearance and a dusky red color. This is best observed in the upper lid and the appearance of the conjunctiva has been compared to that of a mulberry or, more aptly, to that of a piece of red velvet. In this stage, which may be considered as one of transition between the follicular and the cicatricial, secretion is apt to be rather more marked. Gradually the follicles and hypertrophy disappear altogether, the conjunctiva becomes thinner and, after assuming for a time a somewhat gelatinous appearance superficially, is finally replaced more or less by cicatricial tissue and becomes dull, dry and lustreless and marked by scar formation. The cicatricial conjunctiva contracts and, by this contraction, the palpebral aperture is narrowed, the globe is compressed by the lids, and inversion of the lid margins is produced. Furthermore, the fold of transition is obliterated, the cul-de-sac is rendered more shallow, cicatricial bands may develop between the ocular and palpebral conjunctiva and even cystic formations may take place in cases that have never been submitted to operation. It is in the cicatricial stage of trachoma that vascular keratitis or pannus which may be complicated by iritis is most apt to make its appearance. As has been already stated, keratitis may develop at the very commencement of the disease but, when this occurs, it usually subsides when the chronic period is reached, and well-marked and persistent pannus before the stage of cicatrization is rather unusual. Pannus always invades the cornea from above, and the parallel vessels running into it from the limbus serve to distinguish it from other forms of keratitis. Along its advancing border, small ulcerations may make their appearance from time to time. They are almost invariably superficial and perforate only with the most extreme rarity. So long as keratitis does not develop, the patient suffers but little inconvenience from his disease. Acute or sub-acute exacerbations may occur from time to time and the secretion with which they are accompanied may cause temporary discomfort, but it not uncommonly happens that, during the follicular stage, the diagnosis is first made by the physician, the patient stating that, so far as he knows, he has never had any trouble with his eyes. With the development of keratitis, however, the patient's condition becomes at once manifest objectively, and the pain, lachrymation and photophobia from which he suffers are very distressing to himself. The keratitis of trachoma is a very serious affection for, while it is possible for it to disappear under treatment without causing deterioration of vision, some haziness of the cornea is apt to persist in cases of any considerable duration. In the worst cases, repeated attacks of keratitis occur and the transparency of the cornea is greatly diminished. Sometimes the blood-vessels of the pannus will disappear but a dense cicatricial opacity will remain, covering the upper half of the cornea, or the greater part of the superficial layers of the cornea may be converted into connective tissue which will greatly interfere with vision. In addition, the cornea, weakened by the connective tissue formation, may be unable to resist the pressure of the intra-ocular fluids and ectasia will take place. Finally, the keratitis of trachoma is often aggravated by the irritation of the lashes, displaced by the disappearance of the intermarginal space or crowded against the globe by the incurvation of the lids. By the co-operation of these factors, vision may finally be greatly reduced. Most of the worst cases retain sufficient sight to enable them to perform coarse work. A few become totally blind in one or both eyes.

Such is the clinical picture which the disease presents in its various stages. A few words in regard to its treatment. The treatment of trachoma should be operative, and all cases of trachoma should be submitted to operation. Cases of follicular conjunctivitis may be treated by the local application of astringents, and it has seemed to me that some of them are caused, or at least are accompanied by refractive errors, which should be corrected. When, however, follicles and hypertrophy co-exist, no matter how slight in extent the disease may be, treatment should begin with operative procedures, for it is obvious that our chances of ridding the patient of his disease are much better if we operate at an early period than if we wait until, with the failure of local applications, the conjunctiva has become extensively infiltrated. The operation employed should be expression, without previous scarification, and it should always be performed under general anaesthesia by ether or chloroform. The local anaesthesia produced by cocain, employed by instillation, by infiltration or in the powdered form, is not sufficient to permit of the thorough removal of the follicles in any but the mildest cases and, even in these, the result is exceedingly uncertain. The best instrument to employ for expression is Knapp's roller forceps, and the operation should not be concluded until all visible trachomatous tissue has been removed. It is true that operative procedures do not always result in cure, in fact, unless supplemented by properly conducted treatment with astringents, they hardly ever rid the patient of his disease, but, as a method of greatly shortening the duration of trachoma, the operation of expression holds a legitimate and, I believe, a permanent place in ophthalmic surgery. To look upon it as a panacea, unaided by other means, is to invite disappointment.

Active secretion should be treated by nitrate of silver. Of the substances employed as local applications during the chronic stage, sulphate of copper is by far the best. Formalin has seemed to me to be of no value whatever, and I have never been able to convince myself that solutions of bichloride of mercury possessed any merit, apart from the friction usually employed in their use.

319 Lexington Avenue.

A CASE OF ACUTE INFECTIOUS OSTEO MYELITIS.

By William G. Eynon.

VISITING PHYSICIAN HOUSE OF REFUGE.

This case of acute osteo myelitis was one in which the exciting trauma was comparatively insignificant, and in which the subsequent process was very acute and rapidly fatal.

The initial infection may have been by the staphylococcus, generally accepted as the bacillus most concerned in the production of this disease, but a culture taken one week after the trouble commenced showed both streptococci and staphylococci, the former being in the majority. Experiments by Ullman show that any pus producing bacteria injected into the bones of an animal, or into the circulation after injury to the bone, may produce an attack of osteo myelitis with its accompanying leucocytosis.

The best evidence obtainable tends to show that this disease is not due to any specific organism; cases have been reported in which the infectious process was produced directly by the typhoid bacillus and others by the pneumococcus. It is possible that the acute suppurative variety of osteo myelitis is the result of infection by the staphylococcus pyogenes albus, while acute infectious osteo myelitis with its rapidly spreading symptoms is the result of either a streptococcus or mixed infection. Dr. Canon (Deutsche Zeitschrift fur chirurgie) arrives at the following conclusions from experiments:

1. The presence of streptococci in a case of osteo myelitis must be regarded as a danger signal.

2. Suppurative osteo myelitis is a staphylococcus pyaemia of the formative period.

3. It is possible to immunize animals against staphylococcus infection by using blood serum from persons recovering from staphylococcus disease.

The bacilli may be introduced into the system through a superficial wound over the injured bone, on the other hand as in this case there may be no wound of the skin and we must fall back on the assumption that the pyogenic bacteria were latent in the circulation prior to the accident, and as in this instance a rather low vitality offered a diminished resistance and favored the development of the disease.

The patient M. L., age 12 years, was an inmate of the New York House of Refuge, born in this country, both parents being alive and in good health, there have been no cases of tubercular or other hereditary taint in the immediate family, as far as could be learned; his ancestors were fairly long lived. He has no history of serious illness but he is thin and inclined to be anaemic.

On December 29th, 1907, while playing cat in the yard one of his playmates accidentally let go of the piece of broomstick with which he was striking and it struck this lad on the outer side of the left ankle just above the malleolus. He had some pain and could not walk very well so he was helped up to the hospital where I saw him soon after, at that time there was some swelling and slight redness at the point of injury but nothing to indicate anything more serious than a superficial bruise. Rest and the ice bag was the only treatment thought necessary.

About three hours later I was hastily summoned and found the boy totally unconscious and delirious with a temperature of 107, a pulse of 142, and respiration 36. There was no apparent cause for this sudden change aside from the ankle which was still swollen and red but there was no extension of the inflammation nor was there any evidence of infection. An examination of the urine showed nothing abnormal. There was considerable nausea and vomiting for which calomel was ordered internally, the cold baths and ice bag being continued.

The following day there was noticed a very slight redness extending a little way up the affected leg but with little or no increase in the swelling. Bier's treatment was then tried, the rubber bandage being applied just above the left knee for three hours. The patient continued unconscious and delirious, being unable to retain very much nourishment and the pulse had become more rapid and weaker. Passive hyperaemia seemed to be of little or no benefit, and as the high temperature and mental symptoms persisted, three deep incisions were made in the affected leg on the outer side; from which there leaked a half ounce or more of serum with very little blood,—these openings were packed with bichloride gauze and irrigated frequently with hydrogen peroxide. Wet bichloride dressings were applied to the entire limb below the knee. There was still no improvement in his general condition, and on the fourth day of his illness I thought I detected signs of deep fluctuation in the leg although there was scarcely any noticeable swelling. Several free incisions were made on the inner side of the limb from which three or four ounces of pus were evacuated. On introducing the finger it was found that the pus cavity surrounded the tibia and fibula, both of which were denuded of their periosteum. There was little or no relief after this, symptoms of profound sepsis persisted and five cubic centimeters of anti-streptococcus serum were administered.

The following day there seemed to be a slight amelioration of his symptoms with a drop in the temperature and another dose was given but there was no perceptible improvement after this injection, and it was decided to depend upon nourishment and stimulation which were used freely in conjunction with strychnia; at the same time the abscess cavity was packed and irrigated frequently, copious quantities of pus pouring through the dressings. On January 5th a slight swelling was noticed over the right elbow joint, an incision revealed the presence of pus and a denuded condyle of the humerus; two days later the same condition was noted over the head of the second metacarpal bone of the right hand, this was freely incised and the same process was found to have affected this bone. In the meantime the boy's general condition grew gradually worse and he succumbed to general septicaemia on January 10th after an illness of 12 days. On January 8th some of the pus was sent to the Polyclinic Laboratory for examination, the report showed the presence of streptococci and staphylococci in abundance, the former predominating. An examination of the blood indicated an acute leucocytosis.

The early diagnosis of this disease is of prime importance and it is not always easy. The symptoms may simulate those of any acute infectious disease such as pneumonia or typhoid fever. A very slight injury followed by symptoms quite out of proportion may be rather perplexing, and evidences of pain and tenderness are hard to elicit on account of the profound stupor, at the same time it seems to me that even in the early stages some signs of deep inflammation may be found over one of the long bones near the site of the injury, and this with the general septic condition ought to give us a clew to the condition with which we have to deal.

The prognosis in cases like this one is certainly very bad, if any line of treatment will be of use it seems to me that an early incision opening into the bone affected and thorough drainage of the medullary canal is the rational procedure, which might in some cases prove effectual in preventing any further spread of the infection.

423 East 136th St.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

STATED MEETING HELD MARCH 12, 1908.

DR. GODFREY R. PISEK IN THE CHAIR.

DEMONSTRATION OF DR. FOWLER'S SUCTION BELL DOUCHE.—Dr. Edmund P. Fowler presented an ear douche combined with suction. He said the ordinary ear douche did not properly douche the ear. His device was particularly adapted to use in children but could be used in adults as well. A bell fitted around the ear and a fountain syringe was attached to the tube. He thought that the use of this arrangement had aborted seven mastoid cases in his experience which would ordinarily have gone to operation. The local hyperaemia that was produced probably accounted for the success. This differed from the Bier method of passive hyperaemia in which the whole head was rendered hyperaemic by a band around the throat. The suction tended to draw out the pus, while the douche washed it away. With the fountain syringe one foot above the ear the pressure that the suction caused amounted to 22 mm. If the syringe was placed two feet above, the pressure amounted to between 44 and 45 mm. Patients complained of no dizziness during the use of the instrument. This pressure was very slight compared with what was produced by a hand bulb. The apparatus was efficent in draining the pus cavity in the ear, which was one of the most difficult things in aural surgery to do.

AMAUROTIC FAMILY IDIOCY.—Dr. Charles Herrman presented a fourteen months' old baby from Dr. LaFetra's service. There was no family history of nervous or mental disease. The labor was instrumental and the child was born cyanotic and remained in this condition for some time. The baby was breastfed and the mother noticed that it did not move its arms or legs. The child had convulsions at the age of seven months and at the age of thirteen months very severe convulsions. The child had the characteristic spot in the macula lutea and was almost blind. There was a slight umbilical hernia and the testes had not descended. The characteristic cherry red centre in the optic disk was present and there was an optic atrophy. This was the only child in the family.

Dr. Sara Welt-Kakels presented a baby, eighteen months old, whose parents were healthy Germans from a German province in Russia. They had had five children and two had died of the same disease. There was no history of tuberculosis or syphilis in the family. The labor was normal. At the age of five months the characteristic symptoms developed. The reflexes were increased, the sight was diminished and there were the characteristic changes in the macula lutea and optic atrophy. Children having this disease died about the second year or before. Dr. Welt-Kakels showed the picture of another case having the characteristic symptoms which Dr. Sachs had called attention to. There was the explosive laughter and difficulty in deglutition and the usual change in the macula and optic atrophy. The speaker thought that these changes in the macula lutea were not generally understood. A study of the pathology of the disease showed degeneration of the ganglionic cells. The strata of these cells in the retina was very thick, there being from eight to ten strata. In the fovea they were very thin hence the red color showed through. It had been noted as a curious fact that Hungarian and Russian parents who gave birth to healthy children in their own country had such children as these when they came to

America. She thought mental anguish had something to do with it.

Dr. Martin Cohen presented a specimen of an eye removed two hours after death from a case of amaurotic family idiocy. The specimen was preserved in Muller's fluid and showed marked atrophy of the optic nerve, and dilation of the veins with contraction of the arteries. The bright cherry-red spot could be plainly seen in the macula lutea.

Dr. Henry Heiman said that the spinal fluid from three cases of amaurotic family idiocy that he had seen last summer showed noncellular elements. The pressure in the spinal canal was but slightly increased.

CASE OF CARDIO-DEXTRA.—Dr. Sidney V. Hass presented a baby, seven weeks old, which had been brought to the clinic with a gastro-enteritis. In making the routine examination he had found the heart on the right side, with the apex somewhere in the vicinity of the fifth intercostal space outside the nipple line. The parents were Russians and had had perfect health. The child became blue when he cried and there was a marked systolic murmur over the cardiac area.

Dr. Godfrey R. Pisek reported a case of cardio-dextra. This peculiarity had existed for eight years before it was recognized. It was strange that such a condition could have existed so long without anyone finding it out.

Dr. Ward Bryant Hoag reported this case, a valet, twenty-five or thirty years of age who never knew that there was anything wrong with his heart. He gave no history of any acute illness or effusion of the chest, or anything that would push the heart over to the right side. He had no dyspnoea.

Dr. Herman Schwarz said that it was rare to find a dextrocardia without a transposition of the other viscera. X-ray pictures would be of great value in determining this condition. The transposition of other viscera and vessels would seem to go with the transposition of the heart.

CASE OF LYMPHANGIECTASIS.—Dr. Henry Heiman presented this case, a baby, eight months of age. The labor had been normal and the child breast fed until one month of age.

At the age of three months the child had a retropharangeal abscess. The abscess was incised and the wound healed in two weeks. The present trouble had existed for two weeks. There first appeared a swelling over the left clavicle which remained stationary. There was no fever, but the child was restless and fretful. The swelling was a tumor consisting of dilated lymphatic vessels. These tumors were usually congenital. They were caused by some obstruction to the lymphatic vessels or circulation. It was necessary to take every precaution in aspirating such a tumor. Total extirpation of the mass might sometimes be necessary in order to effect a radical cure. One had to differentiate this condition from a cold abscess, from a gumma, a diffuse lipoma, a hernia of the lung, a haematoma or an aneurism. By excluding these it was determined that this was a case of lymphangiectasis.

Dr. Goldstein of Mount Sinai Hospital had aspirated some of the fluid which was glairy and coagulated, and this determined the diagnosis.

A CASE OF HYDROCEPHALUS.—Dr. Montgomery Hunt Sicard presented this baby whose parents were Hebrews and not related. They had had two children, one of which had died of pneumonia and the mother had had one miscarriage. The child appeared to be perfectly normal until six weeks of age, when the head began to enlarge, and the child had convulsions from time to time. The baby was bottle-fed. The enlargement was principally upwards. The bones of the cranium were very much separated and there was both nystagmus and stabismus.

Dr. Sara Welt-Kakels reported a case of hydrocephalus in which lumbar puncture gave a positive diagnosis. She believed that this method was worthy of consideration and perhaps advisable.

TREATMENT OF CLUB FEET.—Dr. Reginald H. Sayre said that congenital club feet could be treated successfully without tenotomy if taken early enough. In the early months of life the bones were pliable and amenable to plaster of paris appliances. Later on in life something should be applied that was removable. Wire bent to the required shape and supported with a metal foot plate, when strapped to the part kept it in proper position. Adhesive straps placed on the side of the limb, properly buckling the apparatus would keep the heel in the apparatus. Apparatus applied for club feet should go far enough up to grasp the thigh. If treatment is stopped before patients have normal volition and can, in response to normal excitation, place the limb in proper position these cases are apt to relapse. Dr. Sayre presented a case that demonstrated his meaning and showed that application of plaster of paris appartus.

Dr. Sayre presented two babies, one whose feet were in bad shape because of lack of care and one whose feet were in proper shape due to good care. The latter required only a piece of elastic to help in keeping the feet girded up.

Dr. Sayre also presented another case of club feet with tendency to relapse.

VOLKMANN'S ISCHAEMIC PARALYSIS.—Dr. Reginald H. Sayre said that cases of Volkmann's ischmaeic paralysis were seldom reported in literature because they rendered the physician liable to suit for malpractice. This condition was always the result of malpractice. Volkmann in 1875 had first drawn attention to this condition and wrote extensively upon the subject. In 1884 Lesser reported seven cases occurring in the upper extremities and related his experiments with animals showing that similar results could be obtained on animals as were obtained upon human subjects. Too long and too tight application of an Esmarch's bandage was followed by this paralysis. A case of post-partum hemorrhage was reported by Bernay in which both lower extremities had been bound up from midnight to 9 a. m., was followed by characteristic symptoms like rigor mortis. This patient died of sepsis and exhaustion after three days. If such constriction was kept on muscles say for seven hours or thereabouts the muscles would be killed and one would get gangrene or a destruction of muscle. If the circulation was girdled for a certain length of time destruction of the muscle cells would follow; they would disintegrate and the muscles become like boards. There might be coldness, bullae might develop and paraesthesia. If the pressure were not removed in from five to seven hours one could not get regeneration of the muscle cells. Such cases usually followed fractures of the forearm. The pressure made at the elbow compressed either the ulnar nerve or the vessels. The majority of cases reported have been of the upper extremities. These cases should be distinguished from hemiplegia or ulnar nerve paralysis occurring from disease or injury.

Dr. Sayre presented a case of a child who had sustained a fracture in 1906. The arm was done up in splints and remained so for several weeks. At the end of the seventh week the hand assumed the position shown. Such deformities came on in a few weeks, while paralysis from cerebral causes or paralysis of the ulnar nerve came on after a much longer time. At the hospitals these cases were treated by massage and electricity. He referred to one patient who came with the hands in extreme flexion last October in whom operative interference would have been needless. In the way of operative work he called attention to the following: (1) One might cut down upon the contracted muscles. The deformity was chiefly in contraction and the flexors of the fingers were not concerned. The lumbricales put the hand in the position shown. (2) Jones, of Liverpool suggests bending the hand down, relaxing the muscles and then placing the hand in its proper position in plaster. Then the hand should be extended further and further. Contracted muscles became exceedingly painful. He had used hyperextension in the case he presented. (3) Another plan was to shorten the bones of the forearm and in this way to approximate the origin and insertion of the muscles.

Dr. Sayre presented a girl who had been under treatment for six months and it would probably take six months more before the best results could be accomplished and the hand come under normal control. Relapses occurred when Jones' method was done under ether. One should remember that we are dealing with an altered condition of the muscles. The muscles have become atrophied and like a fibrous cord. In some cases nothing has done any good, the arm remaining flaccid. One stretching did not answer the purpose; the muscles had to be worked little by little, day after day in order to revitalize the parts, and to cause a restoration of the muscle belly. It was not a case of muscle nerve paralysis but of muscle destruction.

Dr. Herman Schwarz did not think that pressure alone brought about this form of paralysis, that necrosis no doubt did occur. Many cases reported were not cases of Volkmann's ischaemic paralysis but pressure necrosis. Many authors attributed this condition not to negligence but to other conditions. He had recently seen a case of this form of paralysis that had been treated in Dr. Lilienthal's service at Mount Sinai Hospital. A shortening of the bones was done with good results. He thought Jones' method better than shortening the bones. He believed that tight bandaging was not the only cause of this peculiar form of paralysis.

Dr. Sayre recalled a number of authorities who had written upon this subject and all agreed that it was an intractable condition. Almost every case reported had done well by tendon elongation; some did well after bone shortening. The case he had presented he had treated after the method of Jones of Liverpool. Some would say that it was a question of starving out the muscles by cutting off the blood circulation. The same condition resulted in animals when one cut down upon the artery and starved out the vessel. He thought the majority of cases resulted from improperly applied dressings.

CASE OF POLIOMYELITIS.—Dr. Roger H. Dennett presented a child of four years of age who had had a typical attack of anterior poliomyelitis about the middle of last August with paralysis of all four extremities and of the neck. There were twelve cases in the same town and one other in the family. The other child died in ten days. The interesting feature of this case was the marked improvement of all four extremities. There was an involvement of the abdominal muscles above the umbilicus and these had not improved. This paralysis of the upper abdominal muscles was all that now remained.

CASE OF SCROFULODERMA.—Dr. Charles Herrman presented this case. It was interesting on account of several things. There was a congenital deformity of the hands, feet and nose. The palate was asymmetrical, and there was also a peculiar condition of the tonsils. In addition there was also a peculiar condition of the skin. Dr. Fox had diagnosed the case as one of scrofuloderma. The deeper tissues of the skin were involved and left definite scars in the skin. The color was the characteristic livid red. The lesions were circumscribed and were not painful. He thought the tuberculin test should be applied in this case. The mother stated that the child was born with this condition of the skin. Scrofuloderma may exist for many years and does not react to any known form of treatment. There was no specific or tubercular history in this case.

CASE OF SPLENOMEGALY.—Dr. Roger H. Dennett presented this case, a child of twelve years whose family history was somewhat interesting. He had a brother who had an enlargement of the abdomen, which was discovered only at the age of six or eight years. The doctor said he had an enlarged spleen and liver but was perfectly well until the age of seventeen when he contracted typhoid fever and died. There were three other children who were well and there was no history of lues or tuberculosis. This enlargement of the abdomen was noticed two or three years ago. He had always been well except for an attack of measles at the age of three. He was only brought to the clinic a few days ago and was found to have an enlargement of the spleen and liver, but no glandular enlargements. The blood count showed 4,800,000 erythrocytes, 85% hemoglobin, and 15,000 white (27% polymorphonuclears, 40% small lymphocytes, 2% large lymphocytes and 1% transitionals.) This child had had this condition for at least three years or perhaps longer. There was no anaemia, and the child had a good color and was mentally bright. The case was diagnosed as one of primary splenomegaly. Boviard has reported two such cases and in one the blood examination was practically the same as in this case.

A NEW JACKET FOR THE CORRECTION OF DEFORMITY IN POTT'S DISEASE.—Dr. Charlton Wallace exhibited this new jacket which showed open spaces for breathing. He also showed two children wearing the jacket.

PROBABLE TRANSPOSITION OF THE VESSELS OF THE HEART.—Dr. Herman Schwarz presented a boy nine years of age who had come to his clinic two years ago because of a cough. In addition to having a cough he was cyanotic. He had the typical clubbing of the fingers. His mother said she had observed this cyanosis at birth. He had had measles when three or four years old and other ailments and had been attended by physicians but none had noticed the congenital heart. The lungs were normal, the liver slightly enlarged and the spleen just palpable. Traces of albumen and fine granular casts were present in the urine. An X-ray examination of the lungs showed them negative as far as consolidation was concerned. The X-ray did not show any enlargement of the heart. Percussion gave normal results. There was a marked accentuation of the second sound all over the precordium. After excluding conditions in the lungs and other tissues as well as chronic intestinal toxaemia one came back to the heart in looking for the cause of the cyanosis. Generally we could assume that in a cyanosis of this sort with no exertion in walking and with a clear heart tone it was due to transposition of the vessels at the base of the heart. An open septum might be present without symptoms and this might account for the length of life of some of these patients. In cases of transposition of the vessels of the heart the aorta arises from the right instead of from the left ventricle. The pulmonary artery instead of coming from the right ventricle comes from the left. The smaller circulation has arterial blood while the peripheral circulation has venous blood. The anastomosis in pure cases between the bronchial and pulmonary arteries has been immensely widened and this might account for the prolongation of life.

A CASE OF CRETINISM.—Dr. Louis Fischer presented a man, 23 years old, who was a twin brother of another cretin. The physical and mental condition of both patients were very good.

A CRETIN RESULT OF SIX YEARS' TREATMENT.—Dr. Eli Long presented a nine year old girl whom he had first seen when she was eleven months old. She was a true cretin and an idiot. Although nine years old she had no mental development at all. She had taken 15 grains of thyroid extract a day, but her mental condition remained the same although she was in good physical condition.

Dr. Long presented photographs of two cretins one aged 23 years and the other eleven months. The man had never received treatment until five years ago when he was placed on thyroid. His physical condition was almost perfect.

AN UNUSUAL CASE OF MASTOIDITIS.—Dr. John C. McCoy gave an illustration on the blackboard of an unusual case of mastoiditis. The patient was a girl nine years of age. One month previous to coming to him she had had earache. No discharge from the ear had been noticed. Two days before he saw her she had complained of pain. Examination revealed a boggy swelling back of the left ear which fluctuated. The drum membrane was found to be of a dull red color. She told the doctor that the origin of the pain was in the fluctuating mass. This fluctuating mass was incised and a large amount of pus evacuated. The cortex of the mastoid was perforated, the opening being about one quarter of an inch in diameter. Pus came through this aperture. Upon enlarging the cavity of the mastoid an old mastoid cavity was found filled with granulation tissue and pus. Practically the whole mastoid was emptied by the process. The inner plate of the lateral sinus was entirely gone. The entire cavity was cleaned and dressed and the girl was doing nicely. This case was interesting because the process had gone on so long without giving any symptoms. There was no rupture of the drum membrane. This case was a good illustration of the benefit to be derived from an early paracentesis of the drum membrane.

REMARKS ON THE EARLY DIAGNOSIS OF POTT'S DISEASE.—Dr. Charlton Wallace said the most interesting feature in connection with the early diagnosis of Pott's disease was the attempt to make the diagnosis before the development of deformity. One should always take the history into consideration. A family exposure to tuberculosis direct or indirect was a feature. The disease used to be considered congenital in origin. The speaker had seen deformity develop without pain or subjective symptoms. The mother often helped to make the diagnosis. She would notice that the child did not play with other children, had lost weight and was weak, that the child walked on its toes to avoid jars. If the child was closely observed it would be noticed that it had a peculiar gait when walking. Four normal curves of the back would be found to be obliterated or exaggerated. In stooping the "Sayre sigh" would be noted; this would be very prominent if the disease was low down. The child would stoop with the back straight. The limitation of motion in all directions was an important sign. Turning the child over by grasping both ankles was a test for muscular spasms. The hand placed on the back and moved up and down gently would reveal a disease focus if one was present. In considering prophylaxis one should never expose a child to a case of tuberculosis. Most of these cases of bone tuberculosis were due to a lack of prophylaxis in the family. Deformity was prevented by a frame, with the child strapped and kept thereon. Sayre's plaster of paris was preferred to Callow's in some cases. The advantages of Callow's jacket were that there was a gradual correction of the deformity, made by continuous pressure and not by extension. There was absolute control of the patient with no home interference. The patients were made more comfortable. The speaker thought the Callow jacket the best thing in orthopaedic surgery today. There was no embarrassment to respiration and the organs were not crowded. The respiratory movements were an aid in correcting the deformity. The principal point in the jacket was that it grasped the pelvis and shoulders and with the chin piece on it grasped the head. With these points fixed and with pads pressing on the back at points of the least resistance something had to give away.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Section on Pediatrics.

STATED MEETING FEB. 21, 1908, ARCHIBALD D. SMITH, CHAIRMAN.

THE TREATMENT OF PNEUMONIA IN CHILDREN by Maurice Packard.—The general rule is that the treatment shall be one which aims at the elimination or destruction of the toxin. As we do not know yet how to prepare a serum which will successfully combat the toxin, we are limited in our treatment to elimination.

That there is a toxin present in the blood has been known for a long time; for the constitutional disturbance is far and away above what we should expect to result from the pulmonary lesions. The toxin may be actually demonstrated by bathing in pneumonic serum, a turtle's beating heart. The heart immediately stops. If, however, serum be taken from a patient who has passed his crisis, and applied to a turtle's heart as in the previous experiment, the heart continues to beat. This shows that the toxin existing in the serum during the febrile stage of a pneumonia, is neutralized at the time of the crisis.

The clothing in pneumonia should be light. There should be no jackets or poultices to disturb the comfort of the patient. Fresh air and sunlight should be furnished in abundance and a temperature of 60 F. maintained in the sick room.

The diet should be light.

Indiscriminate bathing does harm—especially cold bathing. A high temperature in the child is not of such grave import as in the adult. A luke warm sponge-bath will reduce the temperature. Do not give emetics, or heart depressants, or use heavy syrups as expectorants.

A dose of calomel may be given with advantage at the onset of the disease. During the illness frequent hot saline irrigations will help materially to keep the gastro-intestinal tract in good condition, and to remove some of the toxin. Elimination is aided also by a combination of the salicylates and the alkalies.

In using stimulants, it is better to be a day early than ten minutes late. The one which has served me best is camphor, of which ½ gr. may be given every 3 or 4 hours, in half a drachm of sweet almond oil. The Japanese oil of camphor is a very good preparation to use. Aromatic spirits of ammonia is frequently of great service. Of digitalis, the best preparation is the fluid extract. Strophanthus and strychnine are too well known to require comment.

For the pain, cupping, strapping or sinapisms may be of service.

To prevent reinfection of the lung, it is a good plan to give creosote.

Of course the mouth and nose should be kept scrupulously clean.

Discussion.

Dr. Kerr thought that the abandoning of the coddling treatment, the pendulum had swung too far in the opposite direction. It is undesirable to leave young babies in the cold air without medication.

Dr. Read agreed in general with Dr. Packard, except that he did not think the temperature should be as low as 60 F.

Dr. Northbridge thought the temperature should be about 70 F.

Dr. Bartley had been very much impressed by the action of carbonate of creosote in pneumonia following influenza. To a child of one year, 2 gr. may be given every 2 to 3 hours. He had seen the use of arsenite of strychnine in senile cardiac degeneration followed by very good results, and thought that perhaps it might be well to use it in pneumonia in place of the sulphate.

Dr. Parrish did not think that creosote carbonate was as effectual in children under one year as in older children and adults.

He believed firmly in fresh air, and a temperature of from 50 to 60 F.

Dr. S. Beck thought that where there were high fever and delirium, there the cold bath might be of distinct value, reducing the delirium as well as the temperature. He had often noticed a diarrhoea in the later stages of the disease, and thought that it might be caused by swallowed mucus. As this diarrhoea affects the prognosis, the bowels should be kept well open with oils, in an effort to prevent it.

Discussion closed by Dr. Packard. All of his cases of pneumonia following influenza had been mild, and had recovered without the use of creosote carbonate. Alcohol in doses large enough to be tonic is very apt to derange the stomach. The strength of the fluid extract of digitalis varies so greatly that it is better to give it up and use camphor instead. Next to camphor, the best stimulant is aromatic spirits of ammonia.

Formaldehyde Disinfection.—Formic aldehyde vapor has long been recognized as one of the most efficient germicides available for disinfecting rooms, but there has always been a difficulty in devising a safe, economical, and effective method for obtaining the gas from solutions or from its dry polymeric form, which would not require expensive apparatus and a skilled operator. G. F. Johnson first drew attention in 1904 to a new means of obtaining the gas without external heat, by the simple addition of permanganate crystals to formaldehyde solution. Since the appearance of his paper many experiments have been made for the purpose of determining the relative proportions of each which will yield the best effect.

F. M. Houghton and L. T. Clark publish, in the Therapeutic Gazette for July, 1907, the results of their experiments on this method of liberating formic aldehyde from aqueous solution. They found that when 240 grains of crystals of permanganate of potassium was placed in an ordinary three-gallon pail and 480 c.c. of formol added, sufficient gas was evolved to disinfect 1,600 cubic feet of space. As the ebullition set up was very violent, occasioning much foaming and spattering over the pail, the authors tried various experiments to retard the reaction sufficiently in order to do away with this disadvantage. They eventually succeeded, by mixing the crystals with 15 per cent. of Portland cement and enough water to give sufficient consistency for making small blocks. After being moulded, these briquettes are left to dry, and can then be readily handled. The charge of formaldehyde is poured into the pail, and three briquettes, each containing eighty grams of permanganate crystals, are dropped into the liquid. The reaction is slower and less violent. The authors claim that formic aldehyde disinfection is simply and quickly accomplished by means of the permanganate briquettes; no expensive apparatus is necessary, and no outside heat is employed, thus lessening the danger of fire; more thorough disinfection is accomplished, because the whole volume of gas and moisture is liberated during a very short time. The usual sealing up of the room is necessary, and the operator must leave the room directly after the permanganate is put into the liquid.— Medical Record, Dec. 7, 1907.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 156 Fifth Ave., New York.

Telephone 1032 Gramercy.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL.

NEW TEACHINGS IN PEDIATRICS.

A revolution has been and is now taking place in pediatrics. Men of broad training have gone beyond clinical observations and have tried to establish the principles that cover these clinical facts.

The training and preliminary education of the younger physicians in the modern medical college, makes them capable of working along scientific lines; and these facts are modifying practice and teaching.

The utilization of the Sciences of Physics, Chemistry, Biology and Animal Nutrition, as allies to medicine, have tended to remove medicine from the realms of empiricism.

The newer chemistry of milk has upset many of the older theories concerning milk. New compounds and their properties have been discovered. New sets of terms and definitions are coming into use.

The general laws of animal nutrition have been found to apply to infants, and the broad principles of nutrition established by vast numbers of experiments on animals, can be used as a basis for teaching.

The fundamental laws of animal life, adaptation to environment, inherent protective ability and immunity are assuming greater value and have a direct bearing on the field of pediatrics.

P.

A STEP BACKWARDS.

The bills now before the New York State Legislature "to prevent cruelty by regulating experiments upon living animals" will seriously interfere with research work should they become laws, and it is the duty of every physician to use his best endeavors to defeat them.

These bills seek to define and fix by law the cases in which an anaesthetic must be, or need not be, given to an animal; the cases in which an animal must be, or need not be, killed immediately at the end of the experiment, and if such experiment "is calculated to cause pain or distress" it becomes a misdemeanor unless it conforms with the sections of the bill.

The laity becomes the judge and jury of all original work where animal experimentation is needful and if the future is to be judged by the same hysterical outbursts as in the past, the outlook is not bright for the scientific advancement of the art of medicine in those states where such laws may prevail.

ABSTRACTS.

Rickets and Syphilis.—That rickets can be the effect of hereditary syphilis, says Marfan (Sem. Med., October 2, 1907), has long been recognized. But the authorities who have held this opinion have not considered hereditary syphilis as the only cause of rickets; they have contented themselves with the knowledge that hereditary syphilis can produce certain bony deformities. Parrot was the first to enunciate the theory that rickets is due entirely to hereditary syphilis. He observed in the fetus of the newborn child a disease which developed in three stages: The stage of hard osteophytes, characterized by the growth at the ends of the diaphyses of long bones of a very porous bony layer; this stage occurs during the end of intrauterine and the beginning of extrauterine life. The stage of gelatinous alteration and of semihard osteophytes, which occurs during the first two months of the first year of life (extrauterine), and is characterized by the substitution of a soft, gelatinous substance for the medulla and the bony layers of the spongy tissue, and by degrees of the compact tissue; the stage of the sponge-like tissue and of soft osteophytes, which occurs towards the end of the first year of life, and is indistinguishable from rickets. Parrot maintains that this last stage—true rickets—is merely the consequence of the first two stages, which are essentially syphilitic. He also states that the recognized signs of hereditary syphilis are found in 90 per cent. of rickety infants. The author considers that the sponge-like tissue and the soft osteophytes are the lesions of true rickets and not syphilitic; he also thinks that Parrot has overestimated the percentage of syphilitics among rachitic children. Other arguments, too, are the fact that infants have been known to become rachitic before their parents have become syphilitic, that in the hot countries in which syphilis is very widespread rickets is very rare. Parrot attempted to produce rickets in animals, and from his failure to do so has argued that rickets is an entirely human disease, as also, he thought, was syphilis. It is now known that rickets has occurred in animals which have remained refractory to syphilitic inoculations. The author, however, while discrediting the theory that hereditary syphilis is the one and only cause of rickets, is of opinion that syphilis does take some part in the causation of rickets, for rickets is often seen in the subjects of hereditary syphilis. He agrees broadly with Fournier that hereditary syphilis, like all hereditary or acquired taints, predisposes to rickets, but is not in itself sufficient to cause that disease; but goes somewhat farther, and says that on occasions syphilis can cause rickets. Hereditary syphilis, then, can cause two distinct sets of bony lesions—the proper specific lesions and the non-specific changes, the parasyphilitic manifestations of a rickety nature. These two distinct species of lesions may occur separately or together. Syphilitic rickets is distinguished by four characteristics: its early appearance, at birth or within the first few months of life; the predominance of cranial lesions; an accompanying severe anaemia, due to the appearance of the disorder at a time when the system is busy making blood; chronic splenic enlargement, which, though found in non-syphilitic rickets, is much more constant in the syphilitic variety.—British Med. Jour., Feb. 22, 1908.

The Treatment of Rectal Prolapse in Children. — Dr. Bittner reports two cases of rectal prolapse in children, two years old, in which he had obtained a permanent cure by a subcutaneous purse string suture, narrowing the anal ring. In both instances the prolapse was marked and had been present for a considerable time, the rectum protruding for a length of four or five inches beyond the flaccid and dilated sphincter, especially during defecation. The operation, which was performed after the failure of other measures, was as follows: For several days before its performance the children were kept in bed on a fluid diet and the intestine thoroughly emptied. On the day of operation the child was given only weak tea and after the intestine had once more been emptied a small dose of opium was administered. The rectum was then tamponed and the surroundings carefully cleansed. Small incisions were made through the skin at the median raphe in front of and behind the anal ring, and a strong silk suture threaded in a curved needle inserted through the anterior incision into the cellular tissue and passed to the left of the anal margin as far as the posterior incision, where it was brought out. It was again introduced, passed subcutaneously along the right margin of the anus and drawn out at the anterior incision. The silk suture was gradually tightened, the degree of constriction being determined by the assistant who introduced his little finger into the anus. After tying and burying the ligature the small incisions were carefully sutured and the tampon removed from the rectum. A small dose of opium was again administered and the child kept on a fluid diet for five days, after which the sutures were removed and the bowel thoroughly emptied with castor oil, given for several days. The silk suture was found to have the advantage of gradually becoming absorbed and not requiring removal.—International Jour. of Surg., Feb., 1908.

Juvenile Physiological Albuminuria.—ULLMANN (Berlin. Klin. Woch.) examined the urine of 42 small children and school girls between the ages of two and a half and thirteen years. These children were supposed to be perfectly healthy, and for the most part were well nourished, and all were subjectively well. Fourteen, or 33.3 per cent., however, had albumin in their urine without any other evidence of nephritis, and on the basis of this experience Ullmann suggests that this condition must be considered as a more or less physiological manifestation of early life. In most instances the tendency is outgrown, but when it is found in adults it must be regarded as the persistence of this early condition. He therefore does not agree with Leube in regarding the albuminuria of puberty of this author as a disease of development with a well characterized clinical picture, and also does not consider that it should be called orthotic albuminuria, but rather that the condition should receive the name of juvenile physiological albuminuria, and be differentiated as such. The diagnosis naturally can be made only after long-continued and careful observation. Treatment is superfluous, for in most cases the tendency disappears as the individual grows up, and in the others it persists in spite of all therapeutic efforts. It is without effect on the patient's health or length of life, and its presence need not be apprehended by insurance examiners.—The Charlotte Med. Jour., February, 1908.

Delusions of Grandeur in General Paralysis of Children.—BARBOUNEIX (Rev. Mens. des Mal. de l'Enfance) says paralytic dementia is of very infrequent occurrence in childhood and adolescence, and at this time of life chiefly attacks idiots and imbeciles. The course is a far slower one than in adults, but remissions are uncommon. The onset of the disease interferes with the physical and sexual development of the patient. While delusions of grandeur are not common in children, they are not as rare as usually stated, occurring in 12-14 per cent. of the cases of juvenile paralytic dementia. They are characterized, as a rule, by the silliness and childishness of the concepts; the patient will say, for instance that he is enormously rich, for he owns 25 cents, or 500 monkeys. Outside of general paralysis, delusions of grandeur in individuals under twenty years of age occur only in dementia precox.—The Charlotte Med. Jour., February, 1908.

Thyroid Insufficiency and Nocturnal Enuresis in Children and Adults.—HERTOGHE (Bull. de l'Acad. R. de Med. de Regle) believes the thyroid gland principle, in the sense of its cellular product, is of such importance for practically all the organs and functions of the organism that an excess as well as a deficiency will lead to disturbances of a serious character. The thyroid gland presides over the growth of the body and regulates the assimilation and decomposition of food-stuffs. An uninterrupted influence is exerted by it upon the muscles, the nerves, the brain, the skin, the epithelium of mucous membranes and of glands. Also the sexual organs are subordinate to it, in regard to their normal or pathological evolution and function. Hemorrhages, abortions, malformations, the imperfect or normal development of the fetus; the entire period of lactation, and with it the thriving of mother and child, are controlled by the thyroid gland principle. An excess during pregnancy may harm the mother to the advantage of the fetus. The growth of the child, puberty, adolescence, sexual maturity, etc., are all under the same influence. Nocturnal enuresis is usually due to a deficiency in the thyroid principle. In view of these various considerations, the importance of the thyroid principle as a therapeutic agent is constantly on the increase.—The Charlotte Med. Jour., Feb., 1908.

Acute Poliomyelitis Associated with a Diplococcal Infection of Spinal Sac.—(Lancet, Feb. 15, 1908). The case of a boy of twelve years is reported by W. Pasteur, A. G. Foulerton, and H. MacCormack. At the time of the report the patient was still crippled in the use of his lower limbs. The authors were able to make the following demonstrations: Identification of a micrococcus in the spinal fluid withdrawn during life from a patient with symptoms of acute poliomyelitis, success in the production of an ascending motor paralysis in a rabbit after a prolonged period of incubation by inoculating this fluid into the subdural space; the demonstration on the death of the inoculated animal of a micrococcus in the cerebrospinal fluid similar to that seen in the fluid from the human case, and, further, by similarly inoculating another rabbit with an emulsion of cerebrospinal substance and fluid from the first experimental animal, they have succeeded in reproducing a motor paralysis, again after a somewhat prolonged period of incubation, and again associated with the presence of the micrococcus in the spinal fluid. But while they have succeeded thus in obtaining direct evidence of the infective nature of the illness and of its association with a certain microorganism, then evidence is incomplete bacteriologically, since they failed to obtain the micrococcus in culture on artificial media, and so are unable to give a complete description of it. The authors further believe that it has been established that there is a specific infective disease, of which acute poliomyelitis is a frequent and prominent, but not essential, feature. From the scanty information at our disposal it would appear that this specific disease has no clearly distinguishing primary features to enable one to differentiate it by its clinical symptoms from many other febrile conditions of probably infective origin which are frequently met with in practice, but which may not have sufficiently distinctive symptoms to enable a definite diagnosis to be arrived at. And so, whilst the serious complication of acute poliomyelitis when it has occurred has been at once recognized, the primary disease has not been differentiated hitherto, but has, in fact, usually been altogether overlooked.—Medical Record, March 7, 1908.

Deaths from Calomel.— Fatal cases of poisoning from calomel have become much more infrequent of late years than formerly. Observant medical men attribute this decrease to the greater purity of the calomel of the present time as compared to that of some years ago. Calomel was formerly frequently contaminated with bichloride. The recognition of this fact during the American civil war and the subsequent washing of all the product used by the careful practitioner no doubt saved many lives, besides numerous cases of salivation which followed the heroic and frequent administration of calomel in the south. Some cases were probably due to idiosyncracy, but by far the most of them were due to contamination with bichloride, or to changes taking place subsequent to ingestion which changes many think are the transformation of calomel into bichloride.

Sinnhuber, in the Therapeutische Monatshefte, gives the details of a case where a man twenty-four years of age succumbed to the administration of eight three-grain doses of calomel. Although danger signals were thrown out, the calomel was continued for a time and the man died on the twenty-fourth day.

Idiosyncratic intolerance of calomel is, unfortunately, not rare. The tolerance of calomel as well as other mercurial salts is very varied in different individuals. One case is on record where a man took in the course of 23 days 285.2 grains of calomel without the slightest disturbance of his system. On the other hand is reported the case of a boy, age 14 years, who took five grains of calomel, became comatose and in that condition died. In thirty years we find eight fatal cases reported in the literature. Besides these cases are a great number of intoxications which ended in recovery. Calomel should always be administered with circumspection and discontinued on the appearance of the first danger signal.—Am. Med. Compend, Feb., 1908.

Dysmenorrhoea in Children.–Monats. f. Geb. u. Gyn., December, 1907). Marie Tobler has investigated 700 cases of dysmenorrhoea in Frankfort, following the example of Jakoby, John Williams, and Vedeler. In Tobler's series the symptom was primary in 234 patients. By primary dysmenorrhoea, painful menstruation beginning when the catamenia are first established is understood. Secondary dysmenorrhoea, beginning later, was present in 466 of Tobler's cases, 322 being girls and 144 married or parous women. He concludes: (1) The distinction between the primary and secondary form in multiparae is important; the latter is distinctly the more frequent. (2) Both forms are markedly frequent in nulliparous girls with constitutional disorders, such as chlorosis; in others where the establishment of the catamenia is retarded; in others where the patient's vocation is exhausting or unhealthy (lead poisoning, etc.); and in others with constipation, indicating impaired function of the alimentary canal. (3) Menorrhagia is the rule in girls with secondary dysmenorrhoea. (4) The dysmenorrhoea of young girls is markedly premenstrual, with its climax during the first hours of the show of blood. The pain is not of the labour type, but continual, and often associated with general malaise. (5) The genital tract does not show any lesion sufficient to explain the source of pain. (6) The fact that dysmenorrhoea in young girls is so often secondary does not support the theory of purely mechanical agencies (stenoses, flexions) as its cause. (7) Neither the circumstances of the patient's life nor her clinical history can in the great majority of cases justify the theory that the origin of dysmenorrhoea lies in the nervous system. (8) The majority of cases of dysmenorrhoea in young girls appears undoubtedly due to disturbances in the pelvic circulation. Passive hyperaemia is a common result of faulty nutrition, hygiene, and clothing; it is increased during the periods, so that very active hyperaemia results. As the elastic elements of the uterus are not rarely illdeveloped in youth, these disorders of the pelvic circulation entail stretching and compression of nerves. (9) Tobler believes that the principal seat of the pain lies in the subperitoneal connective tissue, where the vessels and nerves are most exposed to pressure. (10) Clinical observation and the results of treatment favour this theory. (11) In contradistinction to the morbid conditions associated with dysmenorrhoea in young girls, painful menstruation in married and parous women is often observed in patients where distinct morbid changes in the genital tract exist. Still, Tobler is uncertain how far such changes can be looked upon as the cause of the dysmenorrhoea, and disturbances in the pelvic circulation may be after all, the true agents in the establishment of the pain.

The "Scarlet Fever Heart."—(Myocarditis scarlatinosa).—Under this title Pospischill, one of the chief authorities in Vienna on infectious diseases, contributes (Wien. klin. Wchnschr., 1907, September 12) a long paper dealing largely with the varying symptomatology of different epidemics of this fever, but particularly with a curious condition of the heart which at times occurs, and which is so characteristic as to be of diagnostic importance. His attention was first drawn to it in 1903, when four children of one family were all admitted simultaneously to his ward suffering from commencing scarlet fever, and all had in addition signs of endocarditis—cardiac enlargement, arrhythmia, and apical systolic murmur. He naturally supposed that this was a case of family proclivity to cardiac disease, and the diagnosis of endocarditis was confirmed by the persistence of the bruits in three of the children, and of the arrhythmia in the fourth, throughout their residence in hospital. He was soon, however, disabused of the idea that the endocarditis was a family peculiarity by the number of cases during the same epidemic in which he detected what was to him a novel cardiac lesion. The cases cropped up at short intervals for seven months, and then suddenly stopped. Despite careful watch, no further cases of cardiac disease at the onset of scarlatina have been discovered between then and now, until quite recently they have again begun to appear. Clinically there is often found a blowing apical or pulmonary systolic bruit, an accentuated pulmonary second sound, and arryhthmia. What is more characteristic, however, is a reduplication of the first sound with a rough grating murmur, loudest near the third costal cartilage, and audible over the whole sternum; in well-marked cases it is the same as what is heard in pericarditis. These signs generally occur at the onset of the illness, and usually last but a few days; they are very apt to recur during any febrile complication of the convalescence. They seldom develop for the first time in the later stages of scarlet fever. The benign course and absence of effusion led Pospischill to doubt whether all these cases were really pericarditis; in two out of his three autopsies the pericardium was smooth; in the third there was inflammation. He apparently regards the condition as a myocarditis extending to the pericardial surface (*bis ans Perikard heranreichende Erkrankung*). The most striking clinical feature is the rough murmur and the split first sound; a systolic bruit may precede or be superadded to these. Pospischill gives examples of cases in which the diagnosis was founded on these signs. He was called to see a boy who, beyond appearing ill and showing sign of *scharlach-herz,* had no other symptoms. Scarlet fever was diagnosed, and subsequently the patient desquamated. In other cases he found the same signs on patients in chickenpox and diphtheria wards, and the discovery was generally the herald of an outbreak of scarlet fever among the neighboring patients. Pospischill notes that among others Litten and Ashby have recorded such cases, without, however, realising their full significance.—The Edinburgh Med. Jur., March, 1908.

Certified Milk.—The right to use the term certified milk has just been decided by a recent decision in a test case. The first action was brought before a justice of the peace. The milk dealer was charged with having offered for sale and sold as "Certified Milk" which was not certified by the Milk Commission of the Jefferson County Medical Society. The action was brought under the general provisions of the Kentucky Pure Food Law, under paragraph 4 of Section 3 which prohibits the sale of any article of food "under the name of another article" and under paragraph 8 in the same section which prohibits the sale of an article of food "if it be labeled or branded so as to deceive or mislead the purchaser or consumer." Before the court evidence of the sale and the markings on the bottle were produced, followed by testimony from the Milk Commission, other physicians and from State and national officials that the term "Certified" in connection with milk, both from its origin and its use has come to have a distinct meaning, and that therefore the sale of milk as "Certified" in the manner that physicians and consumers expect is misbranding.

The justice of the peace upheld these contentions and entered an appealable fine. The case was appealed to the Circuit Court. At the second trial the same evidence was given again and the fining of the lower court sustained. The Circuit Judge assessed a nominal fine only, but offered to make the fine large enough to allow the defendant to appeal the case to the State Court of Appeals if the defendent desired. The defendant took the smaller fine and agreed to stop the use of the term.—Louisville Mon. Jour. M. & S., March, 1908.

Treatment of Influenza in Children.—BRETON (Rev. Mens. des Mal. de L'Enf.,) discussing an epidemic of influenza in children, makes the following suggestions, with reference to treatment:

During epidemics, the isolation of grippe patients is recommended, even of convalescents. Disinfection of the rooms is of value. Even with many patients ill in one family their separation is advisable; because some cases run a much simpler course than others. Great care is to be exercised concerning the first outing of these patients. There is special danger not only of relapses of the influenza but of certain sequelæ of which pulmonary congestion is the most common. For the gastro-intestinal troubles, absolute limitation of diet or restriction of all food, save water, is of great value. For the pulmonary troubles, hot packs, mustard sinapisms or hot baths are recommended. The author finds the phosphate of guaiacol of great value in the treatment of influenza, given in doses of four to seven grains per diem, according to age. Convalescence is to be watched very particularly and signs of fresh infection are to be carefully searched for. For the adenopathies, the author finds raw bone marrow of great value.—Interstate Med. Jour., Feb., 1908.

BOOK REVIEWS.

The Treatment of Diseases in Children.— By G. A. Sutherland, M. D., F. R. C. P., Physician to Paddington Green Children's Hospital, to the Northwest London Hospital and to the City Orthopædic Hospital; late President Section for Diseases of Children, British Medical Association. Second impression. Henry Froude, Oxford University Press, Hodder & Stoughton, Warwick Square, S. C., London, Oxford University Press, 91 Fifth Avenue, New York.

This little hand-book is well written and will be found of great aid to the young practitioner. It is a very practical description of the treatment of those conditions found in early life. Special attention has been given to feeding and to the preventive treatment of disease. Many text-books give several methods of treatment; here the author has wisely confined himself to one suggested by many writers on pediatrics, so that no confusion may exist in the mind of the student.

Skin Affections in Childhood.— By H. G. Adamson, M. D., M. R. C. P., Physician for Diseases of the Skin, Paddington Green Children's Hospital, and the Northeastern Hospital for Children. Illustrated, $2.00 net. London: Henry Froude, Oxford University Press, Hodder & Stoughton, Warwick Square, E. C., London. Oxford University Press, 91 Fifth Avenue, New York, 1907.

This small volume contains an accurate description of the skin diseases of childhood, the numerous illustrations in black and white are a great aid to the text. The suggestions as to treatment are up to date and concise. The reader will find much of value in its 300 pages.

Functional Nervous Disorders in Childhood.—By Leonard G. Guthrie, M. A., M. D., F. R. C. P., Senior Physician to Paddington Green Children's Hospital; Physician to the Hospital for Epilepsy and Paralytic, Maidvale. Henry Froude, Oxford University Press. Hodder & Stoughton, Warwick Square, E. C., London. Oxford University Press., 91 Fifth Avenue, New York, 1907.

The author has covered this important field in a most acceptable manner, until now much neglected. He states that the object "is to emphasize the truism that the neurotic child is the father of the neurasthenic adult."

The contents of this volume consist mainly of lectures and addresses delivered by the author at various times re-written and rearranged.

Too little attention is paid by the general practitioner and often by the specialist to the slightly neurotic child, first because the condition is often unrecognized and secondly because the physician believes that he will either "outgrow" it or that the condition is due to some simple disturbance that a dose of castor oil will correct and so the child goes on for years with a functional neurosis not solely caused by reflex irritation.

The work is divided into twenty-one chapters and treats of Effects of Emotions on Health, Nervous System in Childhood, Types of Neurotic subjects, Hypersensitiveness of Special Senses, the Fears of Neurotic Children, Fretting and Home Sickness, Disorders of Sleep, Moral Failings, Mental and Educational Overstrain, Disorders of the Sympathetic Nervous System, Enuresis, Disorders of Dentition, Spasmodic Affections and Convulsions, Spasmodic Asthma, Chorea, the Tics, Delayed Walking, Stammering and other Defects of Speech and Idioglussia.

The reviewer found this work so interesting and so well written that it was hard to lay it aside until it was finished.—F. W.

PEDIATRICS

Vol. XX MAY, 1908 No. 5

ORIGINAL ARTICLES

EARLY DIAGNOSIS AND CORRECTIVE TREATMENT OF POTT'S DISEASE—ANALYSIS OF 643 CASES.

By Charlton Wallace, M. D.,

New York.

The urgency of an early diagnosis in Pott's disease cannot be too greatly emphasized, for upon it depends so greatly the favorable prognosis. Errors of omission are constantly made in regard to this malady, and very many cases present themselves for the first time for treatment only after the kyphosis has appeared.

Failure to recognize this disease is due more frequently to an insufficient or careless examination, than to any lack of knowledge. A correct history has an important bearing upon the diagnosis.

Generally the earliest symptom noted is that of pain referred to the nerve terminals, whose roots are at or near the seat of disease, and not in the back. This pain is of a remittant character. If the cervical region is involved there may be headache, earache, and pain around the neck or occiput. When the disease is in the thoracic region there is "grunting respiration," "stomach-ache." When in lower dorsal or lumbar the sensitiveness will be referred to the lower abdominal walls or thighs. The discomfort of the patient is generally exaggerated at night, when the spasmodic muscles, forming nature's splint, have become relaxed, and the child will have "night cries" or be very restless in its sleep. This pain will have existed for several weeks.

It will have been noted that all movements have been cautious, and the gait a peculiar one, the child involuntarily making an effort to protect itself from jars. It will be reported that the patient steadies his head with his hand, or elevates his shoulders, indicating that there may be disease in the upper dorsal or cervical region. He may walk on his toes with abdomen protruding and back hollow, being suggestive of disease dorsal or lumbar. There has been indifference to play, loss of appetite and weight, extending over a period of several weeks, and it very often happens that the mother is the first to notice the small knuckle protruding from the back.

A tuberculous history of progenitors is not of as great importance as once considered, but a personal exposure to a case of pulmonary tuberculosis, whether in the immediate family or elsewhere should be particularly noted. There is often a previous history of trauma, or acute infectious disease, weakening the resistance, which is not of great consequence in forming a diagnosis.

After the history, the physical examination is made, noting first the general condition. This should always be done with all of the clothing removed. Watch the care and caution which the patient exerts to avoid any sudden movement while undressing. When stripped he should walk, and careful observation of his attitude should be made, looking for any lateral deviation, which is one of the earliest signs of disease in the cervical or lumbar regions. His attempts to avoid jars to the vertebral column should also be noted, and the attitude of the head, shoulders and back. The flexibility of the spinal column is best tested by having the patient sit on the table and bend his head towards his knees, then any interruption to a continuous rounded curve will be seen. For testing the other motions of the vetebral column have the patient lie on the table face down, grasp both of the ankles with one hand placing the other upon the back, near where the suspected disease is, and test for lateral movements by swinging the feet from side to side as a pendulum. With hands in the same position examine the hyper-extension. The limitation of motion in all directions is the most important diagnostic sign.

In the early stages of Pott's disease the spine of the diseased vertebrae will often protrude beyond the normal, when attempts at hyper-extension are carefully made, and the muscular resistance is greatest near the seat of disease, although it may be felt along the entire length of the vertebral column. Another method is to have the patient pick up an object from the floor—if disease is present he will stoop and arise by flexing the knees and thighs, not bending the back, but holding it rigid. All these attempts at motion will, as a rule, increase the pain.

A further search for complications such as paralysis and abscess should be carefully made. When the disease is above or below the theracic vertebrae the X-ray is a valuable aid to early diagnosis, and will show a rarification at the seat of involvement. The various tuberculin reactions are of no special value in localizing the disease, but may be of use in ascertaining a tuberculous general condition, we therefore do not depend upon it as a diagnostic agent.

To sum up, the most important diagnostic sign is the reflex muscular spasm limiting the motion in all directions, this with a history of pain, extending over several weeks, the attitude and peculiar gait above noted, the appearance of the knuckle upon hyper-extension, the X-ray and the tuberculous exposure, should leave no doubt in one's mind.

The treatment may be divided into prophylactic, orthopedic, and general. As we are dealing with a disease which has been communicated by the exposure of the child to the bacillus of tuberculosis, it can readily be seen that we often have in the history the information that either a member of the immediate family has suffered from pulmonary tuberculosis, or the patient has resided in a dwelling previously occupied by a consumptive. The prophylaxis then is to separate the pulmonary case from the child, or when this is impossible warn the patient of what may be the effect of carelessness upon children, and insist upon all modern antiseptic and hygienic precautions.

Orthopedic treatment should be aimed to relieve the pain, prevent and correct deformity. This is accomplished by thorough fixation of the region affected, and removal of the superincumbent weight. In the earliest stage of the disease rest or bed treatment is indicated, but our non-ambulatory treatment is best carried on by using a simple contrivance known as Whitman's modification of the Bradford frame. The child lies upon this apparatus for months, never being allowed to stand or sit up, thus avoiding all irritation to the bodies of the vertebrae and giving nature a chance to begin her healing process. This frame is made of small gas-pipe tubing covered with canvas, its width such that the shoulders and pelvis rest upon its sides. Pads are adjusted beneath the kyphosis, and the child is snugly strapped to the frame, thus compulsory rest is obtained. The patient becomes accustomed to this position in a few days, then the frame can be bent, and an attitude of hyper-extension of the back or opisthotonos be secured. Th acute bend in the pipes should be on either side of the boss and pads placed on the tightly drawn canvas directly between kyphosis which press upon the transverse processes. The constant pull downward exerted at this point by the gravitation of the head and feet separates the bodies of the vertebrae.

For treatment of the disease in the cervical or low lumbar region an attachment at the top and bottom of the frame will readily give traction in opposite directions and thereby add to the efficiency of our therapeutic measures. Our preference for this modified frame is due to patients' adaptability to it, its speedy relieving of the pain, and its corrective worth. Also it is easy to handle the child upon it, the embarrassment to the respiration is of no consequence, but rathere there seems to be an increase of the lateral dimensions of the chest wall. Although this is ideal treatment for all cases during the earliest stages of Pott's disease, it is difficult to apply, when the patient is over six years of age. The longer the time spent on the frame the smaller will be the resulting deformity. The period will range from ten to thirty months. When the patient becomes restless or too heavy to be carried, then the apparatus must be changed.

It is most difficult to secure fixation of the spine and to remove the superincumbent weight, with a patient moving about. Constant vigilance and everlasting perseverance by both parent and surgeon are as essential as the selection of the appliance. One should choose a form of apparatus which the child cannot tamper with or remove. The control of the patient absolutely, or at least of his back, is necessary in order to obtain the minimum amount of damage to the diseased vertebrae.

For this purpose the plaster of paris jacket has been used for years and when the disease has been above the 8th dorsal vertebra, the Sayre jury mast and chin piece have been employed. But with these forms of treatment our results have been far from satisfactory. It is true that many patients have been cured, but the deformity has not perceptibly diminished. To reduce or prevent the kyphosis "in walking cases" has always baffled us, especially in the dorsal region, where a majority of the lesions occur. We therefore, believe that we are justified in trying whatever may be well recommended to us, especially when such good results have been already demonstrated, as those shown by Dr. F. Calot of France. The mechanics of the procedure advocated by him appear the most rational and we believe that it is the best yet devised for reducing the deformity of the ambulatory cases.

During the past five months, we have put many Calot jackets upon the children at the Hospital for the Ruptured and Crippled. Although it is too early to show recessions of deformity there, yet we are thoroughly convinced: that they are more comfortably worn than either the Sayre plaster of paris and jury mast, or the simple plaster jacket; that there has been a decided improvement in the general health of those wearing them; and that the interference with the function of the thoracic and abdominal organs is down to a minimum. With the head held firmly, the shoulders fixed and a good purchase upon the pelvis, it follows that the counter-pressure applied over the kyphosis toward the large opening in front, the direction of least resistance, will cause a recession. The free respiratory movements aid in this work, as the spine of the diseased vertebrae are pressed with each inpiration against the cotton pad inserted in the opening in the rear of the jacket. Thus the deformity may be gradually corrected without any injury or risk of the general spread of the bacilli.

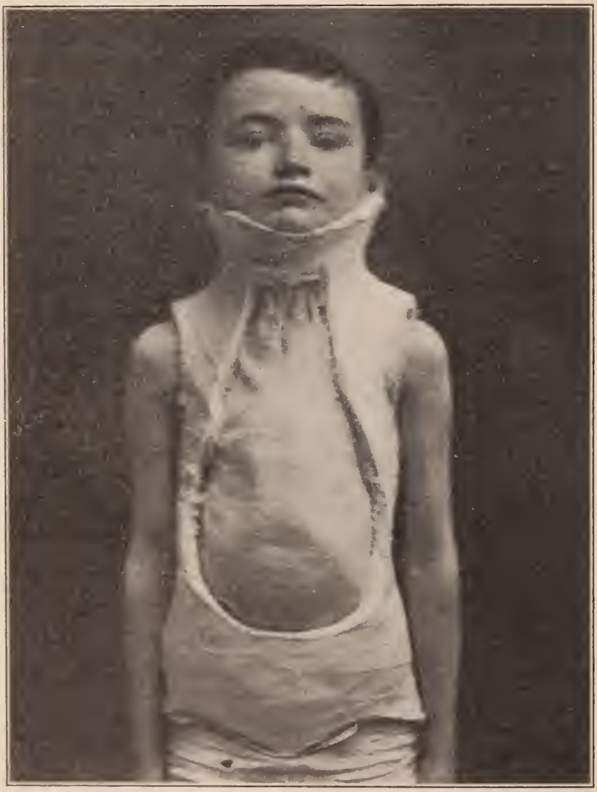


FIG. I.

The only disadvantage known to the author is the time required to apply one; but with a little trained assistance this is reduced to about 15 minutes. One jacket will last from 4 to 6 months and the pressure pads should be changed once in four weeks. When the disease is above the 8th dorsal vertebrae the Calot grand jacket is indicated, otherwise the Calot military collar jacket is used. For low lumbar or sacral disease we prefer the ordinary plaster of paris jacket.

During convalescence a good fitting back brace or plaster of paris corset which can be removed at night is desirable. The orthopedic supervision must extend over years and all of the general measures utilized for pulmonary tuberculosis must be insisted on. Sea and country air are great adjuvants and the children do better in either atmosphere than in the city. When this is impracticable much can be accomplished by carefully instructing the parents about ventilation, food and general hygiene.

The following table of the new cases of Pott's disease treated in the O. P. D. of the New York Hospital for the Ruptured and Crippled shows: that 68% occurred during the first 5 years of life, that 69% had their original focus in the dorsal vertebrae, and that only 6% came then before the development of the kyphosis.

Under 1 year	2
1 year of age	44
2 " "	133
3 " "	129
4 " "	80
5 " "	55
6 " "	4
7 " "	25
8 " "	16
9 " "	8
10 " "	8
11 " " or over	96
	643
Males	263
Females	280

Region of original focus estimated from the most prominent spinous process or the muscle spasm.

Cervical	41
Dorsal	447
Lumbar	150
Sac. II	5

Amount of deformity on first visit.

No deformity	40
Slight "	238
Moderate "	284
Severe "	81

The succeeding cases are illustrative of some of the points brought out above.

Case I. Boy, 6 years old was referred to the hospital O. P. D. on March 10th, 1908. The family history showed that the father, mother and five other children were all healthy but that this child played most of the time with an uncle suffering from tuberculosis.

Personal History. Breast baby and always good health until four months ago. Recovered from pertussis, measles and diphtheria without sequelae. During November, 1907, there was a complaint of pain in the stomach which had persisted. The usual stomach remedies were prescribed by a physician but no relief. A prominence in the back was noticed six weeks ago. Child tires easily and has ceased to romp around.

Examination. General condition fair. All clothing removed. Walks carefully and holds the shoulders elevated, holding back stiff. Motions in lower dorsal region limited in all directions. Pain increased on manipulation. Apex of moderate kyphosis at 9th D. vertebra. Deformity severe—no abscess or paralysis.

Tracing made of the back—diagnosis Pott's disease.

Treatment. Calot military collar plaster of paris jacket. March 11, '08.

Front of jacket cut out and opening of the back undisturbed in order to exhibit to the pediatric section, Academy of Medicine. See photograph.

This case demonstrates source of infection and late diagnosis.

CASE II. Mother brought baby girl 17 months old to O. P. D. on February 12th, 1900.

Family history good—no tuberculosis.

Personal history. Child always delicate. Has had cough for five months. Mother noticed knuckle yesterday while bathing her. No injury or other sickness. Walked at 15 months.

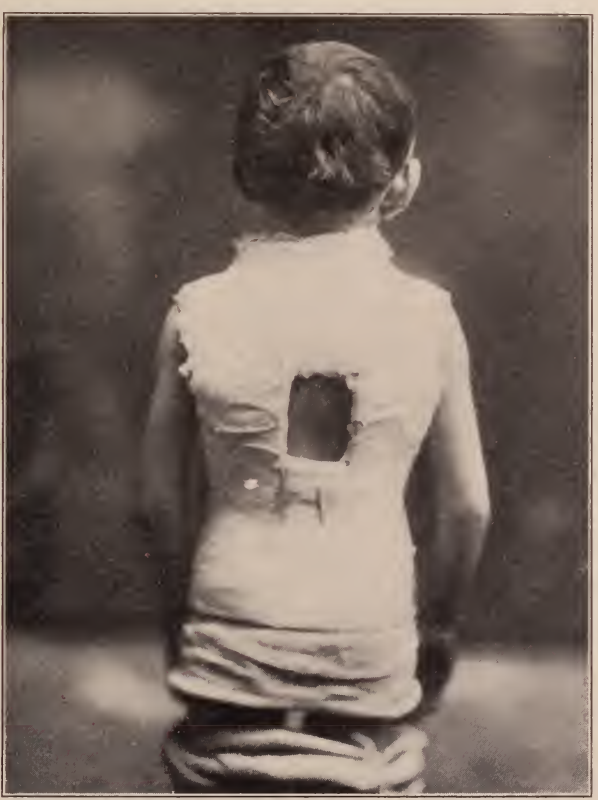


FIG. II.

Examination. Stripped. Poorly nourished, marked grunting respiration and evidently pain. Marked kyphosis at 10th D. vertebra. Motions limited in all directions. Diagnosis Pott's disease. No abscess or paralysis.

Treatment. Measured for modified frame. Tracing shows severe deformity.

Feb. 27, 1900. Frame applied today.

June 8, 1901. Frame bent—child in hyperextended attitude. General condition is good. Tracing—deformity improved.

June 3, 1902. Still on frame. No pain or deformity. Plaster of paris jacket applied today. Tracing.

Aug. 2, 1906. No evidence of active disease. Tracing shows increased deformity. Plaster of paris corset applied today.

March 10, 1908. Tracing shows deformity still severe. Calot grand jacket applied today.

March 11, 1908. Front opening made in the jacket and pressure pad applied over the seat of the disease.

Illustrates the correction of the deformity on the frame and recurrence when plaster of paris jacket is applied.

Case III. Male 2 years of age. He was referred for private treatment on Dec. 20, 1904. There was no history of tuberculosis in the family or of exposure. His health during infancy had been poor, especially during the past few months. During the latter time the child has carried his head to one side and has held his neck stiff, whenever jarred or handled in any way, he has cried with pain and this has persisted.

Upon examination it was found that the general condition was fair. The slightest movement of the patient caused him to cry out. The head was in the left sterno-mastoid position with chin to the right. There was muscular spasm in all of the neck muscles and the motions were limited in all directions. No prominent spinous process but there was induration around occiput. No evidence of fluctuation or paralysis. A very thick collar of cotton which was snugly applied with a muslin bandage, steadying the head. This was worn for one week with some comfort. A further examination upon the next visit showed that firm cautious traction relieved the pain entirely and the diagnosis of Pott's disease was made, the disease probably in one of the first three cervical vertebrae. He was immediately placed upon a modified frame with head and feet extension straps. All of the instructions about fresh air, food and hygiene were explicitly given. The frame treatment was discontinued on Jan. 29, 1906, when a plaster of paris jacket and jury mast were applied. At that time considerable of the muscle spasm had diminished and there was no pain. The general condition had much improved as the patient was kept either out of doors or in a fully ventilated room all of the while. The above jackets were renewed every four or five months, and on August 30, 1907, all treatment was discontinued and the following note made: "Motions are somewhat restricted but there is no pain or spasm of neck muscles. The flexion and extension of the head are just short of normal and rotation is restricted 50%. No abscess or protruding spinous process."

Inference from this case is that the disease was in the atlo-axoid articulation, and that the treatment was efficacious. The patient has been recently seen and there is no evidence of active disease.

126 E. 34th St., N. Y. City.

IS DISINFECTION AFTER MEASLES NECESSARY IN TENEMENTS AND PRIVATE DWELLINGS?

By Charles Herman, M. D.,

NEW YORK.

ATTENDING PEDIATRIST TO THE LEBANON HOSPITAL; CLINICAL ASSISTANT IN PEDIATRICS, VANDERBILT CLINIC.

There are reported to the Department of Health of the City of New York, 15,000 to 40,000 cases of measles annually. In epidemic years the number equals the number of cases of scarlet fever and diphtheria combined. The expense of disinfecting the rooms in these cases is considerable, so that if it can be shown that it is unnecessary the amount saved would be very great.

In hospitals, asylums, kindergartens and other places where large numbers of very young or delicate children are exposed, this extra precaution should be carried out even though it is not absolutely necessary. In cases of measles with complications more specially broncho pneumonia, and in fatal cases the rooms should also be disinfected. But is it necessary in the vast majority of cases in tenements and private dwellings? What is the object of disinfection? 1. To prevent other members of the family from contracting the disease. 2. To prevent the infection of other children who might enter the same rooms.

1. The adult members of the family are usually immune. The other children of the family, with very

rare exceptions contract the disease, unless protected by a previous attack. Infection takes place almost always at the beginning of the catarrhal stage. It is questionable whether the disease is contagious, (except in cases with complications) after the eruption has reached its height. The other children have therefore been infected before the first case is diagnosed. If a child does escape it is infected a year or two later from an *active* case. I have seen this twice.

In the vast majority of cases infection takes place by direct contact. Probably the coughing and sneezing of the catarrhal stage spread the contagious material. In no other disease does the one case follow the other with such mathematical precision. During the last ten years I have seen approximately 3,000 cases. With the exception of infants under one year, only three cases exposed (who had not had a previous attack) escaped. In 75 per cent. there was an interval of eleven days between the primary and secondary cases. In no case was the interval less than ten days, and in only two was it more than fourteen days. In both of these cases there was good reason to suppose that they were not infected by a member of their own family, but by other cases which occurred in the same house.

2. To prevent the infection of other children who might enter the infected rooms—as a rule only the room occupied by the patient is disinfected. However in the tenements he seldom remains in that room more than a day or two.

Authors are agreed that the contagious material quickly loses its infectious character. According to Heuben, "It lives and thrives only in the human body and does not remain viable outside the body except for a very brief period. After a few hours thorough airing a room occupied by a case is not at all dangerous for a new occupant." I have been able to verify this in two instances in which a family in which several children had had measles moved out. Only one room was disinfected. On the following day another family with children who had not yet had the disease, moved in. None contracted the disease.

Thorough airing of the room, cleansing of walls and floor are sufficient.

It has been said that disinfection calls the attention of the parents to the ranges of the disease and that they are therefore more likely to call a medical adviser. Unfortunately the disinfection is performed after the trouble is over. Besides the placarding as now done, and the 'Circular of Information regarding measles' given at the beginning of the disease, do this much more effectively.

The number of cases of measles reported annually has not diminished, on the contrary as is to be expected with the increase in population and increased care in the reporting of cases the number has increased. Every other year we have a marked rise in the curve. Our efforts should be directed toward diminishing the mortality. This is exceedingly high in children under two years. A line might be added to the placard notifying all the tenants of a case in the building, to the effect that, '*This disease is dangerous for children under two years especially if they are delicate.*'"

In the Hospital for Children in Paris, for four years Grancher disinfected the room, bedding, and objects handled by the patient in all cases of contagious disease. In every disease *except measles* the number of cases of house infection was diminished.

Some years ago the French Academy of Medicine concluded after investigation that disinfection after measles was unnecessary. They also decided against the compulsory reporting of cases by physicians. For New York City with its present staff of inspectors it would be a mistake to do away with this. Much can be done in the prevention of the spread of the disease. The inspector visits the case and insists on all school children in the family remaining at home. The mother is told that as soon as the other children show the first indication of sickness they should remain in the house. The placard which notifies the rest of the tenants that there is a case in the building is very valuable. The inspector revisits the case a week later, that is about the ninth day of the disease just before the first symptoms appear in the other children of the family. The importance of not allowing these to mingle with other children in emphasized. At the end of two weeks if there are no complications and no new cases a school certificate is issued.

250 West 88th Street.

Blood Modifications in Infantile Scurvy—PROSPER MERKLEN and LEON TIXIER (Gaz. des. Hôp., Jan. 9, 1908) have obtained results somewhat at variance from those usually gotten in examinations of the blood in a case of infantile scurvy. The authors made their examinations before and during the administration of iron and tonics with antiscorbutic diet. The examinations were repeated daily. The patient had painful pseudoparalysis, marked anemia, but no ecchymoses or hematomata. Most observers have found a relative diminution of the red blood cells, a moderate leukocytosis, and a considerable decrease of the hemoglobin. The authors found the number of red blood corpuscles markedly increased, while the hemoglobin was reduced. After the use of iron for a few days the picture had changed, and in ten days the formula was normal. This shows that iron is of the greatest value to these children. The number of blood cells lessens with the increase of the intensity of the anemia. The diminution of hemoglobin is more marked and sure than the change in the blood corpuscles, which is subject to daily modifications. Myeloid reaction is frequent and is shown by the presence in the blood of myelocytes. This should not be considered as a specific symptom of hemorrhagic diseases. It is allied to toxic infections of considerable duration.—The American Journal of Obstetrics and Diseases of Women and Children, March, 1908.

VULVO-VAGINITIS IN INFANTS AND CHILDREN.

By A. J. Ronginsky,

INSTRUCTOR IN DISEASES OF WOMEN, POST-GRADUATE MEDICAL
SCHOOL AND HOSPITAL, ADJUNCT GYNAECOLOGIST,
LEBANON HOSPITAL.

The subject of Vulvo-Vaginal discharges in children is not only interesting from the etiological and clinical stand-point, but also the social phase of it must always be taken into consideration. It is a well known fact that mothers will display more anxiety about any abnormal condition occurring in the genital tract of their children than any other region of the body, particularly of the female children. Not only will they be anxious as to the ultimate recovery, but also to the nature of the origin of this condition and a good deal of tact will have to be displayed on the part of the attending physician in order to assure them that the given condition is perfectly harmless so far as the future life and happiness of the child is concerned. This state of the lay mind has been brought about by the indiscriminate diagnosis of vulvo-vaginal discharges as being of specific origin without the necessary bacteriological basis for such a diagnosis. The line of questions usually put by the physician assumes such serious proportions that the mother immediately will suspect every male adult of the family as being the probable cause for her child's condition. This was forcibly impressed upon me a few years ago, when a mistaken diagnosis in the kind of vulvo-vaginitis brought about a severe breach in the family, resulting in an immediate eviction from the house of an unmarried brother of the husband. A few days later a bacteriological examination of the discharge proved my original diagnosis incorrect and it was also confirmed by the subsequent history of the case.

In this short paper I will attempt to point out that although vulvo-vaginitis of the severer types in infants and children are usually of gonorrheal origin, still there are such a variety of other causes, which are ordinarily overlooked by the average practitioner that in the light of modern knowledge of bacteriology should not occur. It is important for the patient and for the family that an accurate diagnosis as to the nature and origin of the leucorrhea should be established. An error in either direction will not only compromise the family but also the physician. The greatest source for mistaken diagnosis in this condition is the ever readiness of the physician to assume and associate gonorrhea as a causative factor for the inflammatory processes of the genital tract of the female, be it an infant one day old or an adult woman who has borne children. The teaching of the day is that the absence of the gonococci in a given leucorrheal discharge is no proof that it is not of specific origin; arguing that the absence of the germ being no proof that it might not originally have caused it, as it is well known that while it may not be present in surface discharges, it still may be embedded in the deeper tissues, a fact which is true in all gonorrheal inflammations that lasted for some time. This teaching if not interpreted intelligently will mislead many a practitioner into erroneous diagnoses.

C. H. Robert makes the following statement: "The vulvitis of children is frequently ascribed to gonorrhea, but it is quite certain that purulent vulvitis and vaginitis may exist in children apart from this cause (McCann, Gonorrheal Infections, Encyclopedia Medica vol. 4, page 196). This question is obscure: the mere discharge proves nothing: the gonococcus of Neisser if present proves something: the question is whether it can always be identified in conjunction with other micro-organisms. Statements on the etiology of purulent vulvitis in children are at present confusing, but a large proportion exist which are of simple nature, and can be cured by simple methods. The onus of proving that they are gonorrheal rests with those who make the statement, and in practice it would be unwise to do so unless one is sure." I believe this is the only logical conclusion one can come to after observing a great number of cases both in private and hospital practice.

On the other hand L. Emmet Holt (Medical Record, March 25, 1905) who has studied the clinical manifestations of gonococcus infection in children under three years of age states: "The discovery in the pus cell of the gonococcus is essential to the diagnosis. When many leucocytes are present in the vaginal discharge of infants the cases are regarded as suspicious, because a non-specific purulent vaginitis is uncommon." The above statements uttered by two equally experienced observers leave the general practitioner in a position of extreme doubt, with no fixed criterion as when to consider a given vulvar discharge as specific in origin or not.

We all know that it is specific when the gonococcus is present, but the question to be settled is is it specific when the gonococcus is absent? and if it is specific is it still contagious? The importance of the latter is obvious particularly in private practice. Personally I believe that specific vulvo-vaginitis is quite prevalent in large cities and congested districts, yet it is not as prevalent as is commonly supposed. On many occasions both in hospital and private practice have I diagnosed vulvitis and vaginitis as being of specific origin, when a bacteriological examination proved the diagnosis to be incorrect. Particularly was this true in the newly born infants.

In order to arrive at a proper diagnosis in this affection we must individualize the patient not only as to the present condition, but also the past history of the patient must be taken into consideration. It is well known that all infectious and contagious diseases common to infancy and childhood, produce an inflammatory condition of the vulvo vaginal tract, which causes a leucorrheal discharge, subsiding as the general condition improves and leaving the mucous membrane in a more or less damaged condition that the slightest irritation, no matter how mild it may be, will cause a recurrence of the discharge with no apparent cause for the same. Close questioning of the mother only will bring out the fact that a child has had a leucorrheal discharge during the course of some illness some time ago.

Aside from the gonococcus being a causative agent of vulvo-vaginitis, we have many constitutional and local conditions that are great factors in producing it. Therefore the treatment of a given case will of necessity be in accordance with the underlying cause. At times we find the two conditions combined and hence, should we treat a leucorrhea of this nature locally only, we are certain to meet with no success no matter how painstaking our treatment may be.

The constitutional conditions which may give rise to leucorrhea in infants are many, and I will name some in order of their importance.

(1)

Children who suffer from general glandular enlargement of various parts of the body are likely to have leucorrhea. The vulvar glands acting sluggishly secrete a thin mucous secretion, which usually subsided after the general constitution is improved.

(2)

Anemia is a determining factor and children who are anemic, undersized, have a great number among them, who suffer from a mild form of vulvitis, due probably to a local disturbance of the circulation also to a thinning of the blood, which is very favorable to the production of a transudate.

(3)

Patients, who suffer from chorea and the various forms of choreiform twitchings will by reason of the disturbed general nervous system practice masturbation more than any other class of children. If this continues for any length of time a leucorrheal discharge will invariably take place. Recently a sister of a physician, six years of age, was referred to me for treatment. She suffered from chorea for the past two years, began to masturbate six months after the chorea developed; with the result that when first seen she had a most profuse leucorrheal discharge, which not only annoyed her, but the whole family displayed such great anxiety that I was compelled to remove her to a hospital, where she finally improved. This patient is only one of a great number of her class that I have observed in the last few years.

(4)

Children suffering from chronic valvular diseases of the heart are more than likely to develop a leucorrheal discharge. Particularly in the latter stages of heart disease, when there is a failure of compensation; passive congestion taking place and with it a vulvar discharge very often develops.

(5)

General asthenia of the infant or the child may cause a chronic form of vulvo-vaginitis, usually being of a persistent nature and at times it is very readily confused with chronic specific vulvo-vaginitis.

LOCAL CAUSES.

Under this heading may be included all inflammatory conditions, the various skin lesions, chemical and mechanical irritations, and the milder forms of local traumatism. I shall not attempt to classify them, but will only point out a few that most commonly cause the milder forms of vulvo-vaginitis.

Highly acid urine, rather a common occurrence in children will cause—if parts be not kept clean,—a local dermatitis followed by an exfoliation of the surface epithelium. If irritation still continues a discharge will sooner or later appear. This condition is particularly difficult to diagnose in nursing infants for obvious reasons. Occasionally the placing of a piece of litmus paper between the layers of the diaper will help to determine the degree of acidity of the urine and by directing the treatment towards the neutralization of the urine the discharge will subside.

Summer diarrhoea, if lasting any length of time will eventually in a goodly number of cases, produce a vulvitis. Particularly in those infants, who do not get proper medical attention. Whenever possible it has been invariably my rule to instruct the mother or the nurse in attendance to place a small pad of non-absorbent cotton on vulva to prevent as far as possible any contact of fecal discharge with the vulvar surface. I have found in this procedure a great prophylactic if carried out intelligently.

The universal habit of powdering the genital region a number of times during the day, very often is a source of irritation. The average mother among the poorer classes seldom stops to cleanse the part properly, she allows particles of the precipitated powder to lodge between the various folds in this region. This constant mechanical irritation very often will be the only accountable cause of a vulvar discharge. The above condition is very well illustrated by the following case: A little girl two years old was brought to my office very late at night, mother quite excited telephoned before-hand to find out whether I was home, when asked what all this excitement was about, she replied that it is something she cannot discuss by wire. On reaching the office the mother still excited and without any preliminary remarks cried out, "Doctor my little girl has no front opening." Being that I knew this child since its birth, her statement did not quite appeal to me. On examination I found the whole vulva was covered with a clayish material and surely there was no "opening." After separating the labia minora a profuse foul smelling discharge escaped from the vaginal opening. The mother made due apologies and left for home to come again the next day.

The various forms of eczema of the vulvar region if not promptly attended to will invariably cause leucorrhea. I find that eczema in this region is of a more lasting nature than any other region of the body, probably due to the impossibility of keeping this region absolutely dry. I always tell the mother before-hand that the child may develop a vulvar discharge.

Masturbation from any cause is always to be reckoned with as a probable factor in the production of vulvo-vaginitis. I find that the older children are very reluctant to tell that they practice masturbation, although they may not appreciate that the act is wrong. The general appearance of the vulvar surface in this condition very closely resembles that of chronic specific vaginitis, more so, if the discharge has lasted for some time. A careful differential diagnosis should always be made before a final statement is made by the physician.

Local infections must always be considered in dealing with vulvo-vaginitis. The severity of the inflammation will depend upon the kind of infecting agent. Recently the following instructive case came under my observation: Girl six years old was brought to the office October 26th last. On examination I found an evenly distributed scarlet-like rash all over the body. The other symptoms of scarlet fever being absent, I was rather in doubt as to the diagnosis. The child improved the next few days, the diagnosis being still obscure. On the 10th of November I was called to see the child again, and found her suffering from an extensive erysipelatous vulvo-vaginitis of three days' duration. General and local treatment were promptly instituted and on the 26th of the same month I discharged her considerably improved. December the 9th I was called to see her once more, on arrival the mother informed me that while she thinks the child much better it still is very weak and at times has chills and fever. On examination I found a mass in the right lower iliac region, right above Poupart's ligament. I thought it to be a retroperitoneal abscess secondary to the vulvo-vaginitis. The following day I had her admitted to the Lebanon Hospital. She was operated upon December the 13th. The original diagnosis was confirmed by the operation. She made an uneventful recovery.

CONCLUSION.

(1) Specific vaginitis is not as prevalent as is generally supposed in family practice.

(2) In hospital practice the most common variety of vulvovaginitis that is met is of specific origin due to direct transmission of the infection from one child to the other.

(3) Vulvo-vaginitis although of specific origin is not contagious if two or three smears of the discharge fail to demonstrate the presence of the gonococci.

(4) That with proper hygienic care 50 per cent. of all cases of vulvo-vaginitis can be prevented.

Paraffin Splints in Prolapse of the Rectum in Children—(Jahrbuch für Kinderheilkunde, Berlin, March)—Kephallinos reduces the prolapse and then injects paraffin on each side, drawing out the needle as the paraffin is injected so that a long strip of the paraffin is left in the tissues, forming as it solidifies two straight sticks or splints in the pararectal tissue. This holds the walls stiff and obviates all tendency to prolapse. The paraffin is injected under ether. The needle is introduced about 1 cm. outward and backward from the rectum and it is pushed upward in the pararectal tissue as high as possible, or the paraffin can be injected at two or three points on each side of the rectum. This forms solid rods supporting the rectal walls. The child is kept in bed two days and then discharged. He has thus treated thirty-two patients and states that the results have been satisfactory in every instance. In one case, however, about a year later, the wall became abraded and scraps of paraffin worked their way through and were voided in the stools, but the dense growth of connective tissue around the paraffin has rendered the wall permanently unyielding so there has been no recurrence of the prolapse or other disturbance. There was recurrence in one case in which a single injection had been made; the paraffin splint had evidently bent at a weak point. The first cases date from 1903, and the patients have all been re-examined since.—Jour. A. M. A., April 25, 1908.

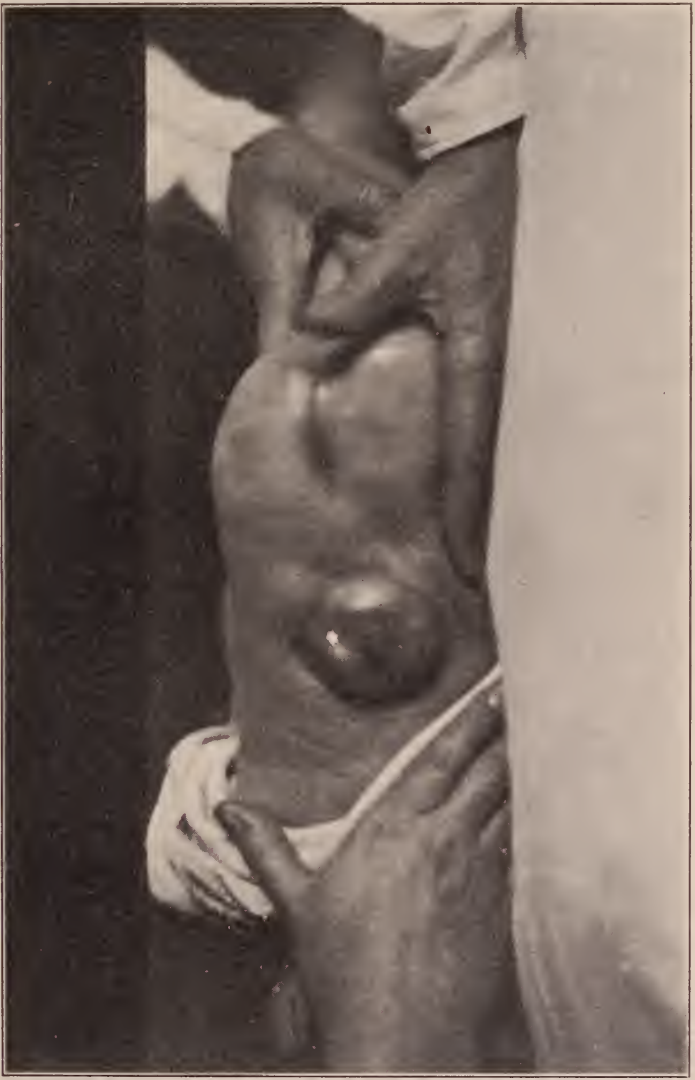
SOME REMARKS ON SPINA BIFIDA WITH REPORT OF A CASE.

By Woodruff Law Post, M. D., C. M.,
New York.

When we are asked by the anxious parents for an opinion as to the future of the child afflicted with this deformity, we must be ready to reply to them in a manner that cannot be misleading. To do this it is necessary for us to be able to differentiate the varieties of spina bifida. We can be guided in this by several main points as there are distinct differences in the physical characteristics presented in each variety. The form, the size, and location of the tumor; the character and thickness of its covering, its translucency, the presence of shadows, the size of the base and number of deficient arches together with the presence of extensive malformations and paralysis are the points to be considered before rendering an opinion on the case. We may classify the different forms of spina bifida according to the gross pathological appearances, and in doing this we find ourselves limited to three or at the most four varieties, according to the position of the fluid.

Accordingly we have external to pia mater of the cord (spinal meningocele); fluid contained in dilated cavities of pia arachnoid (meningomyelocele); fluid within the dilated central canal of the cord (myelocystocele) and also a mixed type in which a cyst of the cord is associated with one of the other varieties of spina bifida (myelocystomeningocele).

The most frequent type, spinal meningocele, is noticed as a globular tumor of varying size situated mostly in the lumbo-sacral or sacral; but rarely in the dorsal or cervical regions. The sac is usually large and globular, entirely covered by skin or at the most only a small membraneous portion on top, while the pedicle is slender and constricted. One or at the most two vertebrae are



involved by the cleft which is situated slightly away from the median line. Cases have been recorded where the pedicle has escaped through a deficiency in the ligaments between normal vertebral arches. The skin surrounding the base of the sac presents a growth of fine flossy hair. The sac may contain a loop of cord or nerves, but paralysis is usually absent and we meet with few cases where other malformations are present.

Meningomyeloceles are commonly situated in the lower spinal segments, less frequently in the dorsal and very rarely in the cervical regions. Usually more than three arches are deficient thereby accounting for the great width of the base. The sac is thin and irregular, slightly lobulated resembling somewhat a tomato in its appearance. It is covered externally by both membrane and skin although the upper portion is largely membraneous and often ulcerated. Shadows of bands may be seen through the translucent membrane. Partial paraplegia may be present but sphincter paralysis is very rare. However other malformations are usually to be seen.

Cases of myelocystocele, of the pure type, where the fluid is confined to the central canal of the cord are very rare. The tumor is usually smaller, covered by thick normal skin, fat, subcutaneous and deep fascia, aponeurosis and tissue of the spinal cord. It may be seen in the lumbar, sacral or cervical regions and usually involves only one or two segments.

Paraplegia and paralysis of the sphincters are however usually present. Other malformations are seen but are not grave in character.

Myelocystomeningocele occurs as a varied sized tumor in cervical, lumbar or sacral vertebra, the sac is thick and fairly opaque although in some complicated cases we see some translucent membrane. This deformity often involves five or six arches. It has a very broad base. We find in this condition the most pronounced paralysis, including the sphincters, also the gravest forms of other malformations. We commonly find spinal curvatures, congenital hernia, absence or deformity of the ribs, and club foot present.

Keeping the main characteristics of each type in mind we are enabled to prognosticate the child's future in a satisfactory manner. The following case is a perfect example of a meningomyelocele.

Baby C—Born Feb. 18th, 1908, weight 5 lbs.

Lumbar tumor 7cm-5cm., irregular, slightly lobulated, covered by a thin translucent membraneous sac the lower part of which is composed of skin. The central part of the membraneous portion ulcerated. Shadows of bands, etc., clearly discernible. The base is broad and the deformity probably involves three or more arches. Partial paraplegia present. No sphincter paralysis. Malformation of both limbs marked.

Photograph taken March 16th, 1908.

April 15th, 1908, child now weighs 12 lbs., tumor seems larger but the ulceration has been healed by normal saline sollution. Paraplegia and malformation of limbs more pronounced.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

STATED MEETING HELD APRIL 9, 1908.

DR. GODFREY R. PISEK IN THE CHAIR.

EXOPHTHALMIC GOITRE IN CHILDREN.—Dr. Eli Long presented a series of cases of exophthalmic goitre which were of special interest owing to the fact that the children were born in this country and have since lived in the Black Forest, about a two hours' drive from Switzerland. The eldest child showed symptoms two years ago when she first returned to this country. She is 17 years of age and showed the enlargement of the thyroid, though exophthalmos is not marked. She has a fine tremor and rapid heart's action. Two younger sisters show slight symptoms of the condition. The mother has almost as much exopthalmos as the children but showed no enlargement of the thyroid. Dr. Long asked the opinion of the members of the section in regard to their condition.

DISCUSSION.

Dr. John Rogers said that to explain the treatment for such cases it is necessary to give a working hypothesis for the physiology of the thyroid gland. Certain individuals, such as the cases presented, apparently possess thyroids which from hereditary or congenital conditions, do not contain as effective secretory powers as other individuals and hence are more prone to be forced into over-activity and hypertrophy by the demands of general nutrition. An antiserum designed to check the activity of the thyroids, which is apparently physiological and compensatory, would be therapeutically wrong. An antiserum in these cases would cause great prostration and would do harm rather than good. Benefit would be obtained only by relieving the strain upon the nutrition, by a quiet out-door life and by supplementing rather than inhibiting the thyroid secretion. Iodide of iron pills, in one grain doses, three times daily, should be given and in addition a preparation of sheep thyroid nucleo-proteid, which acts better than the commercial product made from the whole substance of the gland. Dr. Rogers hoped to publish soon the details of the treatment. A distinction is to be made betwen mild forms of thyroidism as overaction of the thyroid in the cases shown, and the wasteful, destructive overactivity shown in true exophthalmic goitre. It is not always possible to distinguish between symptoms which may be considered physiological and those which are pathological. Under bad management the mild cases may become typical cases of exophthalmic goitre.

Dr. Herman Schwarz asked Dr. Rogers how he would distinguish between a physiologically enlarged thyroid and the thyroid of an exophthalmic goitre.

Dr. Rogers replied by saying that all ordinary goitres would at some stage of their development be acompanied by symptoms which are recognized as those of thyroidism in exophthalmic goitre. There is an apparent essential unity in the origin of all hypertrophies of this organ. He does not think there is any causative condition connected with drinking water of the Black Forest or of Switzerland. The cause is more likely to be poor nutrition, bad food and bad hygiene, or inbreeding.

Dr. Eli Long asked Dr. Rogers when he considers the antiserum indicated.

Dr. Rogers replied that antiserum is perfectly harmless if given in small doses, and a large experience has shown him that people with a dry skin do not do as well on antiserum as those with a moist skin. If the skin is sweating and warm the serum alone will help.

Dr. Godfrey R. Pisek asked Dr. Rogers if he considers the cases presented as in the formative stage of exophthalmic goitre.

Dr. Rogers replied that it is his belief that if the little girl runs up and down the block and gets insufficient sleep she would, in three or four days develop a typical exophthalmic goitre. If on the other hand, she is placed in bed and kept quiet she will have an impaired nutrition and nervousness and restlessness would develop and she would have exophthalmic goitre. It is necessary to improve her general condition. Any undue strain on these cases would produce a typical exophthalmic goitre in a few days or weeks.

Dr. J. Finlay Bell of Englewood, N. J., said that he believes it requires a certain period of observation to establish a diagnosis in these cases. There are sections of the country in which a form of goitre prevails which is very rarely accompanied by symptoms of exophthalmic goitre. There is such a locality in central Pennsylvania. He knew of three sisters who have larger goitres than those presented by Dr. Long, but none of them had symptoms of exophthalmic goitre. He knows a family where there is a large number of these benign goitres, some very pronounced, in elderly people of both sexes.

Dr. Rogers said that many of these goitres are simply cysts. Cystic degeneration is one of the commonest conditions encountered.

THE DISTRIBUTION OF BACTERIA IN BOTTLED MILK AND ITS APPLICATION TO INFANT FEEDING.—Dr. Alfred F. Hess read this paper. He gave the results of his work in investigating the distribution of bacteria in gravity cream and in the different layers of milk and cream. He used the technique of counting that is employed by the Research Laboratory of the Board of Health. He finds that cream contains by far the largest number of bacteria and that skim milk is comparatively free. He finds the bacterial contamination greatest in the uppermost cream and becoming less and less as the lean milk is approached. In a series in which the first two ounces of cream contained 1,383,000 bacteria, the remainder of the bottle contained only 160,000 per c.c. The same principal applies to certified milk and other kinds of milk coming in the range of certified milk. He found also that tubercle bacilli are carried upward toward the surface of the cream. These results applied only to gravity cream. When the cream is centrifuged rapidly there were numerous bacteria in the upper layer but they are also numerous in the skim milk and sediment. If the milk is centrifuged less rapidly or for a shorter period of time, the less dense layer of cream contains more bacteria and the results approach more nearly to those obtained with gravity cream. What is true of bacteria is also true of leucocytes. These findings naturally suggest as a means of getting a purer milk the removal of the upper two ounces of cream. Of course butter fat is lost by this procedure. A bottle of milk which averages about 4.2% fat will be found to contain only 3% fat after the removal of the upper two ounces of cream. As many infants cannot at any time digest 4% of fat this removal of the upper two ounces is no serious disadvantage. The milk containing 3% fat need not be so highly diluted with water. In order to bring this milk into conformity with established principles of infant feeding he has had various portions of bottled milk tested for cream by the Babcock method. The results are incorporated in a table showing that the upper two ounces of cream contain 24% fat. A 12% milk is obtained by dipping off the next seven ounces, a 10% milk by dipping of the next 8 ounces and a 7% milk by using the next 12 ounces. These figures compare favorably with top milk according to established standards. The same formulas may be prepared on this basis as are generally made use of. If one wishes to obtain a 4% milk with its normal quota of proteid one has only to add three ounces of the 10% cream to the 3% milk. This method of preparing milk should be particularly serviceable during the summer months when we have so much to fear from bacterial contamination as well as from digestive disturbances due to a food too rich in fat.

DISCUSSION.

Dr. Henry L. Coit of Newark, N. J., said that systematic efforts had been made for a number of years to eliminate bacteria from milk, and he thought some advance had been made in this direction. Every effort should be made to get milk as free from germs as possible. The subject discussed by Dr. Hess had opened up a new line of thought. It was designed by nature that the calf, the kid and the infant should not ingest the perpendicular droppings from hair, hide and stable manure. As to removing the top milk he said he could see no objection to that with its high bacterial content. Since he preferred lower fat in milk in order to be able to use higher proteids. He recalled what Dr. Jacobi once said after a discussion along these lines about the advantages of lower fat in the mixtures fed to babies. Dr. Coit confessed that, years ago, he felt that it was necessary to use top milk and superfatted mixtures, because of the prevailing opinion in those days that almost all of the trouble in artificial feeding was due to proteid indigestion. This was now clearly proven to be a mistake. There was a very important principle in infant feeding that the capacity for proteid digestion was limited and reduced by superfatted mixtures. Dr. Coit said that some years ago he had mapped out a plan for accurate percentage adjustment, but did not use such rules much of late, because they interfered with flexible thinking. Thinking in percentages was better than figuring in percentages, and this was quite possible if one knew his milk chemistry. Dr. Coit's early work in infant feeding was bound by a series of limitations caused by the writings and teachings of those whom he felt he must follow. But he had gotten away from these hindrances. The careful investigations recorded in the paper by Dr. Hess showed that if contaminated milk must be used, much good could be accomplished by removing the top milk and using the under milk. In Europe where raw milk was seldom used they got rid of the germs and toxins too, by boiling the milk. Dr. Coit said that his method of infant feeding consisted in the use of clean raw milk for well babies. For sick babies he used milk that was cleaned by low temperature sterilization as taught by Freeman. Having seen many cases of tuberculous meningitis he felt that it was unsafe to use raw milk unless the cow was tuberculinized. If tuberculosis was transmitted by raw milk, it was their duty to protect the infant against it. A very large proportion of tuberculosis in infants was surgical tuberculosis, as seen in tuberculous adenitis, tuberculous osteitis, tuberculosis of the serous cavities, and was unquestionably transmitted by the ingestion of the bacilli. Any milk that Dr. Coit did not know he said he felt in duty bound to clean up, therefore, he used domestic pasteurization for all but certified milk. There was certified milk sold in New York City, which contained as low as 400 bacteria per c.m. Dr. Coit believed there were other things to contend with in market milk besides the bacteria. The presence of toxins was quite as offensive. Three or four weeks ago had the opportunity of talking with the President of the American Milk Sugar Company. Milk sugar was made by a syndicate. There were forty or fifty sugar refineries controlled by this one commercial institution. He felt that a great difficulty in infant feeding was to be found in the milk sugar which was made from whey, an end product in the manufacture of things not used for food. He had talked with the chemist of this industry, who supervised the production of the sugar, and found that his suspicions were well grounded, as they did not eliminate all the toxins. The yellow color of the milk sugar was really due to the impurities. The putrefactive bacteria found in the milk were at work upon the whey before the first crystalization. The sugar on the market was from a second crystalization; this second crystalization was necessary before the milk sugar was salable. One drug firm had asked for a third crystalization. After a third or fourth crystalization the sugar of milk would then be pure. Dr. Coit said he merely threw this out as a preliminary statement and would present important data at a future meeting. Milk sugar was contaminated and contained bacterial toxins. Difficulties were encountered from such sugar in artificial feeding.

Dr. Elias H. Bartley of Brooklyn, N. Y., said that several years ago the Milk Commission had their attention called to the fact that six babies who were using certified milk were not doing well and had green, slimy stools and colic. He went to the laboratory with the milk and found that it contained from 20,000 to 150,00 bacteria per c.c. As soon as the contamination was rectified the children did well. He believes that it is a question of numbers that is important. Two questions suggest themselves to him; whether a reduction in the amount of bacteria contained in the milk would make much difference and whether the conclusion that they all were reaching that a high fat content was bad was correct or whether it is the high bacterial count in the top milk that is bad. He had long ago learned that commercial cream can not be depended upon as it is often held back for weeks or months, and the bacteria multiply even in cold storage.

Dr. Joseph E. Winters said that for twenty years he has fed babies in this way by taking off the top one-half or one ounce from a quart bottle of milk and the results have been eminently satisfactory. His reason is that when milk is thus prepared for the bottle and stands it presents exactly the same appearance that breast milk does when it stands in a test tube. Chemical examination shows it to be practically identical with breast milk, namely, 4 to 6 or 7 per cent. fat, one per cent. proteid. It presents the same physical characteristics as breast milk. The tables should not be accepted literally. There is much exaggeration as to the conveyance of tuberculosis in milk and also to other contamination in the milk sold in New York City. The great watchfulness of the Health Board made the sale of contaminated milk almost impossible.

Dr. Henry Dwight Chapin said that the work that Dr. Hess is doing is very interesting and valuable under certain conditions. They have known, in a general way, that cream harbored more bacteria, and this information came largely through the work of Dr. Freeman, but they did not know how accurately they were localized in the various layers, as Dr. Hess had shown. He thought, however, that in practical infant feeding, his own method is good, that is, not to take only the cream but a certain proportion of the cream and skim milk: such a mixture would so dilute the bacteria that, as a general rule, they would occur in such small numbers as not to do harm: this can well be done with the commercial milk if one is careful. However, in hot weather it is well to remember that the top two ounces of the bottle are the dangerous two ounces, so far as the bacteria are concerned. He asked Dr. Hess whether his percentages of proteid were by actual assays, because he had found in the assays he had made that the proteid content did not run quite so high.

Dr. Hess replied that what he had given was taken from the literature, including Dr. Chapin's own work.

Dr. Chapin said he has had actual assays made and has found the proteid to be a little under that assumed to be. Many of the older books told them they should use cream in order to get the right percentages of fat but this had never appealed to him because cream was so inconstant and usually older than the milk, and had large quantities of bacteria. Again they knew very little about the actual percentages of commercial cream. But the work of Dr. Hess would not at all interfere with the percentage ratio of top milks. He can not agree with Dr. Coit when he casts a slur on percentages although he believes that it has been carried to excess. The baby's stomach will tell them whether the percentage is right or wrong by retaining or rejecting the food. It is astonishing that in every recent discussion on infant feeding, there is always advocated either high fat or high proteid; they can not seem to get away from it. Dr. Chapin takes the middle ground. The pendulum has swung too far toward high proteids, ignoring more or less the fats. He can not believe that whole milk is good for babies. Those to whom he has given whole milk have not done well. He said he was especially chary in regard to accepting the conclusions drawn from the work of some workers abroad. Conditions are very different in Europe. In France they have no means of properly preserving the milk, because they have so little ice.

Dr. Rowland G. Freeman said he was asked some years ago by a representative of the Bureau of Animal Industry of the

Department of Agriculture to examine the butter and skim milk from a new butter machine which they were testing; he found that the bacteria of the milk were in the butter. He then examined gravity cream and the milk from which it had risen and found again in repeated experiments that some 95% of the bacteria were always found above the cream line. He found many bacteria just above the cream line and very few below. In laboratory centrifugation the bacteria were always in the cream, but in some milk passed through a commercial separator no more bacteria were shown in the cream than in the skim. Dr. Hess recommended discarding the top two ounces of cream; but Dr. Freeman suggested the using of the skim milk raw and the pasteurizing of only the cream.

Dr. Charles Gilmore Kerley believed they should not go back on nature in infant feeding, and that they had a pattern laid for then in mother's milk. They should respect the nutritional elements in the milk as placed here by nature, and, therefore, the nutritional elements of the fat and proteid should be given as they appeared in the mother's milk. The feeding of well babies differed somewhat from the feeding of those who were sick, and in the latter they should individualize more, and be more flexible, because there was no one method of feeding all babies. He had no one system in feeding infants, nor any scheme.

Dr. J. Finley Bell, Englewood, believed that the milk should be placed in a cold place before the bacteria had time to grow. It seemed to him that they were up against two propositions, either to sacrifice the fats and accept the bacteria, or to sacrifice the bacteria and take low fat mixtures, and he thought the latter plan the better. One should bear in mind the chemistry of the fat, particularly the relative amounts of the stearin and olein, because of the formation of larger globules of fat; the more dense they were the more rapidly were the bacteria carried.

Dr. J. Finley Bell of Englewood, N. J., said that the first suggestion in the survey of the tables was that it required the same time to grow the bacteria in the top as in the lower layers of the milk. If the milk was from twenty-four to forty-eight hours old there would probably be a considerable number of bacteria in all the layers of the milk, and some would grow after the cream had been raised. They all knew that milk could be drawn from the animal and before growing cold placed in a separator, and cream of various percentages occurred. In other words he asked if it would not be better to secure the cream of various percentages before the bacteria had time to grow and shipped as cream. Separator cream had been condemned because of destruction of the emulsion, but he submitted that milk from other than Jersey or Guernsey cows would give a cream not given to this fault. The number of bacteria, 14,700 (as shown in one of the tables) was present after the milk had been drawn twenty-four hours. The milk did not contain that number shortly after the milking. There must have been an incidental contamination, which would have been obviated to a great extent by the separator methods. It seemed to him that they were up against two propositions, to either sacrifice the fats and accept the bacteria, or to sacrifice the bacteria and take a low fat mixture. He thought it wiser to sacrifice the bacteria and to accept low fat mixtures. In regard to the fat question, it seemed to him that the trouble was not one of total fats but a question of the chemistry of the fat. If one took the milk from a Guernsey or Jersey cow there would be a large percentage of stearin and a relatively small percentage of olein. This formed much larger globules because the fat was much denser, and on this account would carry the bacteria to the uppermost layers of the cream more rapidly. It was rather interesting to note that the relative proportion of stearin and olein corresponded closely to the melting point of the fat, and the rapidity of the cream rise in the milk, and also corresponded to the fineness of the emulsion. The fat containing a large amount of stearin did not emulsify finely. It had been proven by physiologists that fat in fine emulsion was digested more rapidly than the fat in a coarser emulsion. It was the character of the fat in many cases that hindered the digestion of the proteids. This occurred in two ways: First, by coating the stomach with an insoluble fat which melted at a temperature higher than the child's; therefore, the function of the glands in the stomach was interfered with. Secondly, the curdling of the milk in the stomach generated mostly by organic acids generated by reason of absence of hydrochloric acid in the gastric juice were coated over with this insoluble fat and so carried into the doudenum, the pancreatic ferments not being developed in the young infant. These curds were carried down into the intestine, where the fat underwent a splitting into irritant fatty acids with putrefaction of the proteids.

He asked Dr. Hess if he had made any observation in reference to the growth of yeasts and moulds in the milk. During a series of examinations in the measurements of fat globules in milk from various animals some two or three years ago, it was demonstrated that yeasts and moulds grew in the top, but not in the lower layers.

Dr. Alfred F. Hess closed the discussion. He said this mode of infant feeding that he had presented has advantages which other methods of top milk feeding do not possess. The first two ounces was the seat of great contamination in milk.

With regard to Dr. Coit's statement about always heating milk when he could not get good certified milk, Dr. Hess thought he would get better results if he first takes off the first two ounces and then heats the milk. Otherwise, he will be heating two millions of bacteria and feeding the baby with them. Even if they wish to use milk that has been heated, he thinks it best to remove the first two ounces and then heat it.

With regard to Dr. Bartley's criticism of Table No. 3 where appeared 24,000 in the upper two ounces and 108,000 in the upper three ounces, this irregularity was caused by the use of a contaminated dipper.

As to the question of 11,000 or 10,000 or 8,000 this could not be calculated exactly. The dilution was made from 1 to 1,000. In one case there were eight colonies, while in another there was one colony. This might be due to a mistake in the dilutions.

With regard to Dr. Bell's statement about sacrificing the bacteria or the fats, he thinks it is necessary to sacrifice the fats. If they take off two ounces, they still can have a milk with 3 per cent. fat. They can use top milk proportions.

With regard to yeasts and moulds, he said he has had no experience with them. He has not been troubled with moulds at all. He has not noticed that there were more on the cream than on the milk.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Section on Pediatrics.

Stated Meeting Held March 20, 1908.

DR. A. D. SMITH, CHAIRMAN.

I. REPORT OF A CASE; RUDIMENTARY FINGERS.—Dr. E. H. Bartley said that he had hoped to show the specimens, but they had been disposed of by his servant. He showed a drawing of the hands of a new born child; there was a small finger on the ulnar side of each little finger, attached to the second phalanx; each rudiment was about ¾ of an inch long and contained a rudimentary nail; each was joined to the little finger by a bridge of skin, which was not dissected before their loss. At point of attachment on little fingers, there was an exostosis.

DISCUSSION.

Dr. Edson had had a similar case; a previous child in the same family had been born with two rudimentary fingers in the same site, and there were scars on the mother's two little fingers at the same point. She knew nothing of the history of the scars.

Dr. Beck mentioned a case of his, with two supernumerary thumbs, which had the usual range of movement of a thumb; they were attached at the junction of the first metacarpal bone and the first phalanx.

II. Dr. John F. Crawford read a "Review of English Pediatric Literature for 1907." Several of the topics mentioned were discussed by the section.

Dr. Smith said that the method of feeding according to caloric value of foods was helpful, but should not be relied on too much. It helps us to know *how much* to give, but the method of dilution is of equal importance. He has tried adding citrate of soda, to infants' feeding, in proportion of gr. i to ℥i of milk; he has not been able to get six weeks old children to take whole milk in this way. He thinks the advocates of citrate of soda are overenthusiastic. He spoke of two cases of Von Jaksch's anemia; one case had rickets as well, the other did not. He thinks the disease is primary, and should be called splenic anemia of infancy.

Dr. Bartley said that he also had tried citrate of soda without result; he had even increased the proportion to gr. i to ℥i of the modified food. He thought that enlarged cervical glands in children were oftener due to tonsillitis or grip than to tuberculosis; he thought that the instillation of tuberculin into the eye offers hope of early differential diagnosis in these cases.

Dr. Parish said that enlarged cervical, axillary and inguinal glands were very common in children, who were only suffering from some gastro-intestinal upset. He had seldom been able to demonstrate enlarged glands in syphilitic children under one year of age. He has tried citrate of soda in full doses· he has found small curds after washing out the stomach in these cases.

Dr. Smith emphasized the importance of Dr. Parish's last statement about citrate of soda; the finding of curds showed that the citrate did not prevent them. He reminded the section that the epitrochlear gland in children was relatively higher up than in adults, and is easily overlooked, even though quite large.

Dr. Crawford urged particular care of the mouth and teeth in children; he says that many cases of enlarged cervical glands can be prevented in this way.

III. "CHRONIC INTESTINAL INFECTION IN INFANTS AND YOUNG CHILDREN." Paper read by Dr. E. H. Bartley. The acute intestinal infections are well known and well treated of in the text books. There is a class of chronic cases much less well defined; they are characterized by recurring febrile attacks, with anorexia and either constipation or diarrhoea (more often the former); between attacks there are anemia, loss of weight, a poor appetite or a very capricious appetite, and a more or less impaired digestion. In infants, absolute refusal to take the breast, is almost diagnostic of some such chronic condition. In older children, the poor appetite or the desire for the wrong sort of food (pickles, bananas, etc.) is very characteristic. Among the causes may be mentioned chronic constipation, overfeeding, feeding with improper food, and a too exclusive or a too limited diet. These infections also follow typhoid or acute gastro-enteritis or acute entero-colitis; they are due also to the use of "comforters," by which germs are conveyed to the mouth; decayed teeth, dirty food, and dirty hands are also causes. Constipation tends to allow accumulation of noxious bacteria, and in this way aids in the infection. The organisms most commonly found are the coli communis, bacillus aerogenes capsulatus, b. putificus, b. bifidis, and proteus valgaris. Lactic and butyric acids, which are normally present in the child's intestine, inhibit the growth of these organisms; as do the intestinal secretions. In making a diagnosis of a chronic intestinal infection, the history of previous attacks is important. The diagnosis has often to be made from typhoid, tuberculosis with fever, malaria, nephritis with fever, and broncho-pneumonia. Careful examination, examination of blood, and observation for a day or two will usually differentiate the condition. The symptoms of an attack are anorexia, coated tongue, foul breath, and fever; then comes obstinate constipation or diarrhoea (usually the former); where the bowels move, the stools are light in color, foul smelling, frothy, and contain mucus and often curds. They are strongly acid in reaction. There are various cutaneous eruptions at this time very often. The condition often simulates typhoid; it usually lasts 5 or 6 days or until the intestines are thoroughly cleansed. The fever may be very high; it is often irregular. The urine is scanty and high colored; the sp. gr. is high; indican and albumin are often present; the urine often reduces Fehling's solution. Between the attacks, the general health is somewhat impaired and the child is nervous and fretful, with a poor or capricious appetite and some degree of anemia. Cystitis and incontinence of urine are common. The disease is more common than it used to be; as it is an infection, overcrowding causes its spread. In the treatment, active catharsis should be kept up until temperature is normal. A daily colon irrigation of warm water is to be insisted upon. At the beginning, calomel or calomel and jalap should be given, so as to produce 3 or 4 movements a day. After this, syrup of senna and aromatic cascara can be used. A good powder is one containing comp. jalap powder, magnesium carbonate and chocolate. Later, intestinal antiseptics are valuable, viz.: B-naphthol, thymol and creosote (given in liquid peptonoids or in syrup of Yerba Santa). For the anemia, iron, as the citrate or acetate, is useful. During the attack, meat, meat soups, eggs and sugar are to be withheld; between attacks, the diet is to be carefully regulated. Treatment must be kept up for weeks and months.

DISCUSSION.

Dr. Smith spoke of a boy of 3 years with this condition; he had a very capricious appetite; Dr. Smith put him on a rigid diet of one quart of milk a day with a certain amount of meat, vegetables and stale bread. Attacks ceased. He thinks calomel is the best cathartic; later, he gives aromatic fluid extract of cascara. He believes in the intestinal antiseptics, especially B-naphthol, salol and thymol. For the anemia, he uses pepto-mangan in young children; in older children, he uses a pill of arsenious acid and ferrous sulphate.

Dr. Kerr said that he was by no means sure that the condition described was an infection but was a depraved mucous membrane, inviting *any* infection. He thought that the way these cases improved and relapsed pointed to this. The appetite of these children for unwholesome food argues some chronic change in the intestinal mucosa. As to diagnosis, the spleen is often difficult to make out because of abdominal distention, blood examination is sometimes impracticable and often misleading; so that typhoid and malaria cannot always be ruled out. A periodic diarrhoea, consisting of several movements in an hour or two, and then none for one, two, or three days, suggests malaria.

Dr. Crawford said that an atonic condition due to deficiency in the proper food, as well as to overfeeding, will bring about a liability to infection of any sort.

Dr. Beck said that water, by mouth and by colon irrigation, was most important in the treatment of these attacks. He uses salol and resorcin as intestinal antiseptics; bismuth is too astringent. For the anemia, he uses syr. ferri iodide; for the vomiting, cerium oxalate or lime water added to the feeding.

Dr. Parrish said that buttermilk had succeeded in some of his cases after everything else had failed. It had controlled chronic diarrhoea and had made the children gain weight.

Dr. Bartley, in closing, said that these infections were rare in breast fed infants. The evidence that it is an infectious process is given in Herter's experiments. In reply to a question by Dr. Kerr, he said that the abdomen was soft and pliable or distended with gas, depending on whether or not gas-forming organisms were at work. He emphasized the fact that constipation usually *followed* the onset of the fever and anorexia. The light colored stools are due to the reducing action of nascent hydrogen. Exposure to air causes the stools to turn green by oxidation. He has seen these chronic infections communicated at the Sheltering Arms Nursery. In reply to a question by Dr. Smith, he said that the pathology of these conditions was unknown.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 156 Fifth Ave., New York.

Telephone 1032 Gramercy.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL.

MEETING OF THE ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN.

The Association of American Teachers of the Diseases of Children will hold its annual meeting in Chicago at the Great Northern Hotel, corner of Jackson Boulevard and Dearborn, at 2 p. m., on June 1st.

Requirements for membership in this association are somewhat unique. To be eligible one must be a regular physician, resident in the United States, Canada or Mexico, who is in good professional standing and membership in his county or local medical society and actively engaged as professor or associate professor or clinical professor of pediatrics, or as adjunct to such a chair, or who holds the position of lecturer on this branch or an equivalent position in a recognized medical college, or who is a member of a properly organized hospital or dispensary staff actively engaged in the treatment of children. All such are invited to join the association; and all physicians and surgeons interested in children are invited to attend the meeting. Its objects are the study, the teaching and the practice of pediatrics.

The officers of the association are as follows:

President, Samuel W. Kelley, M. D., Professor of Diseases of Children in Cleveland College of Physicians and Surgeons, Medical Department of Ohio Wesleyan University.

Vice-president, Chas. Douglas, M. D., Professor of Diseases of Children in Detroit College of Medicine.

Secretary, John C. Cook, M. D., Professor of Diseases of Children in Post-graduate Medical School and Hospital of Chicago (deceased).

Secretary pro tem., Robert A. Black, M. D., Chicago.

Treasurer, George G. Cattermole, M. D., Professor of Diseases of Children in Colorado School of Medicine.

Senators, W. C. Hollopeter, M. D., Professor of Diseases of Children in Medico-chirurgical College of Philadelphia; H. M. McClanahan, M. D., Professor of Diseases of Children, Medical Department of the University of Nebraska, Omaha; F. R. Gilbert, M. D., Professor of Diseases of Children. Kentucky Medical College, Louisville, Ky.

The order of business is as follows:

Meeting called to order and reading of minutes.
Report of Senate, Secretary, Treasurer and Standing Committees.
Unfinished business.
New business.
President's announcement of nominating committee.
Appointment of Auditing Committee.
Address of Welcome: Arthur D. Bevan, M. D., Prof. of Surgery Med. Dept., Univ. of Chicago, Chairman Council on Education, A. M. A.

Address of the President, Samuel W. Kelley, M. D., Prof. Dis. of Children, Cleveland College of Physicians and Surgeons, Med. Dept. Ohio Wesleyan University, Cleveland, Ohio.

"The Teaching of Pediatrics as Seen by an Inspector of Medical Colleges," Frederick C. Zapffe, M. D., Secy. American Medical College Ass'n., Chicago, Ill.

"The Fallacy of Attempting to Teach Pediatrics in the Chair of Practice," John A. Witherspoon, M. D., Prof. Practice of Medicine, Vanderbilt University, Nashville, Tenn.

"The Teaching of Pediatrics in the European Schools," H. M. McClanahan, M. D., Prof. of Pediatrics, Univ. of Medicine, Omaha, Neb.

"The Teaching of Pediatrics in the Medico-chirurgical College of Philadelphia," W. C. Hollopeter, M. D., Prof. Pediatrics Medico-chirurgical College, Philadelphia, Pa.

"The Doctrine of Difficult Dentition," Theodore J. Elterich, M. D., Prof. Diseases of Children, Western Univ. of Penna., Med. Dept., Pittsburg, Pa.

"Anatomical Peculiarities of Infants and Children," Richard B. Gilbert, M. D., Prof. Diseases of Children, Louisville Univ., Louisville, Ky.

"Some Points on Infants' Clothing," Alfred C. Cotton, M. D., Prof. Diseases of Children, Rush Medical College, Chicago.

"The Urinary Infections in Children," John Zahorsky, M. D., Clinical Professor Diseases of Children, Washington Univ., Med. Dept., St. Louis, Mo.

"Chorea in Its Relation to Tonsillitis, Rheumatism and Endocarditis," Wm. J. Butler, M. D., Assistant Professor of Pediatrics, Rush Medical College, University of Chicago, Chicago.

Paper, Wm. W. Butterworth, M. D., Associate Professor Diseases of Children, Tulane University, New Orleans, La.

"Some Phases of the School Child," J. W. VanDerslice, M. D., Instructor in Pediatrics, Rush Medical College, Chicago, Ill.

"Unciniariasis in the Southern States," J. Ross Snyder, M. D., Pediatrist to the Hillman Hospital, Birmingham, Ala.

Discussion opened by H. M. Folkes, M. D., Biloxi, Miss.

Paper, Samuel E. Woody, M. D., Professor Diseases of Children, Kentucky University, Medical Dept., Louisville, Ky.

"Treatment of Pneumonia in Children by the Outdoor Air Method," Frederic W. Loughran, M. D., Visiting Physician to St. Joseph's Hospital; Visiting Physician Sevilla Home for Children, New York.

Unfinished business.

New business.

Report of Committee on Nomination.

Report of Auditing Committee.

Election of Officers.

There is no doubt that this association will elevate the standard of Pediatrics in our medical colleges, too often it is taught in conjunction with other chairs, either that of general practice or diseases of women.

The Constitution states:

"The objects of this organization shall be to promote the interests of the medical profession, especially that part of it devoted to the study, the teaching, and the practice of pediatrics; to foster research upon children and their diseases; to promote the acquisition and dissemination of pediatric knowledge; to advance the standard of the teaching of pediatrics in our medical colleges, and improve its practice in hospitals, dispensaries, and private work throughout the country; to cultivate fraternal feeling among those engaged in this specialty, and harmonize the relations between them and practitioners of other special lines, the general profession, and the public."

AMERICAN PEDIATRIC SOCIETY—TWENTIETH ANNUAL MEETING.

The American Pediatric Society will hold its Twentieth Annual Meeting on May 25, 26 and 27, 1908, at the Water Gap House, Delaware Water Gap, Pa.

The committee is striving to make this meeting of unusual interest. One session will be taken up in discussing the serum treatment of epidemic cerebro-spinal meningitis. Dr. Simon Flexner will open the discussion, and Dr. Dunn will give the results of this treatment as observed in the Children's Hospital of Boston.

There will be a symposium on the influence of "cold air" in the treatment of disease; the diseases to which it is applicable; and the degrees of temperature which should be used in the different type of disease. Drs. Northrup and Graham will open the discussion.

Sufficient time will also be devoted to poliomyelitis anterior, especially as an epidemic. Drs. Koplik and LeFetra have consented to discuss this subject. Again, Dr. Holt has promised a paper on Recent Diagnostic Methods in Tuberculosis of Children.

With four such important and interesting subjects under discussion, the committee feels warranted in asking the members to prepare papers on the different phases of the questions. The committee further suggests that papers should have simple titles, using cases as illustrations, rather than "a case of such a disease."

Members are urged to send, at their earliest convenience the titles of their papers to Dr. Samuel S. Adams, 1 Dupont Circle, Washington, D. C., so that the preliminary program may soon be issued.

CHARLES G. KERLEY, M. D.,
President.
THOMAS MORGAN ROTCH, M. D.,
Chairman of Council.

TO AMERICAN PHYSICIANS INTERESTED IN THE ALCOHOLIC PROBLEM.

During 1907 over 200 papers, lectures and pamphlets were published in Europe and America concerning alcoholism and inebriety, from a purely scientific point of view. Many of the authors complain that these papers were practically lost, because they did not reach medical men interested in the subject. The Scientific Federation Bureau organized in Boston two years ago, for the purpose of collecting and disseminating the facts concerning the alcoholic problem, proposes to secure a list of medical men interested in the scientific study of the alcoholic problem. This list will be valuable for authors and students who wish to address a special audience of physicians, not only to increase their interests, but to stimulate more exact studies of the subject. Such a list will enable the bureau to extend its work of accumulating papers and reprints of all that is written, and keep authors and readers familiar with the new work that is done. All physicians who are interested in the scientific study of the alcoholic problem and research work along this line, and the studies of medical men at home and abroad, are urged to send their names and addresses so as to be registered and receive copies of papers and abstracts from authors and others who wish to have their papers read by interested persons. As chairman of the board of directors of the Scientific Federation Bureau, I earnestly request all physicians interested in this study to send me not only their own names, but the names of other medical men who would care to keep in touch with the new medical literature coming from the press, and also to know the latest conclusions of the scientific world concerning this problem.

Address,
T. D. Crothers, M. D., Chairman.
Hartford, Conn.

ABSTRACTS.

Treatment of Inguinal Hernia in Children— Walker (The Lancet-Clinic, April 4, 1908) in a very able paper on this subject after treating exhaustively of the anatomical and physical causative factors in producing this condition, summarizes his conclusion as to treatment as follows. That it is good surgery to use conservative methods for herniae in children such as using well fitted trusses up to five years of age and that the majority of such cases can be cured thereby. For the following, radical measures should be adopted. Strangulated hernia; irreducible hernia; hernia associated with hydrocele or undescended testis; hernia threatening strangulation; those which are uncontrolled or painful after truss treatment; and herniae in children over five years of age.

E. F. Crofutt.

"Post Nasal Inflammation As a Cause of Febrile Attacks in Young Children— Swain (Yale Medical Journal, April, 1908) attributes many attacks of febrile carditis in children, formerly called ephemeral fever, to conditions resulting from post nasal or adenoid inflammatory conditions.

After treating in a very admirable manner the embryological, physiological and pathological status of the pharyngeal tonsil he calls particular attention to the ease in which pathological conditions of the throat tonsil may mislead practitioners in the diagnosis of febrile conditions. He cites one case in particular where there were no objective symptoms other than fever, general malaise, a small discharge of mucus from the nostrils and no other signs on the fauces except a small whitish spot. The possibility of diphtheria or a central pneumonia was predominant in the mind of the clinician until post-nasal examination revealed an acute inflammation of pre-existing adenoids. Removal of this lead to prompt recovery.

He further draws attention to the many latent conditions which may exist as the results of this affection such as cervical adenitis, anaemia, etc.

He explains the general systemic disturbance by the statement that the lymphatics in this locality being so free and open, that they take up all infectious material as may lodge in the post-nasal space for some time due to its inaccessibility, with the result that shortly afterward there is a sudden involvement of the cervical lymph nodes and thus form a local inflammation of the naso pharynx, a cervical adenitis is started with a resulting systemic disturbance. He draws attention to the close relationship existing between the pharyngeal tonsil and the cervical lymph nodes.

As to treatment he considers best the local application of a bland alkaline solution such as Lister's solutions which removes the mucus; to be followed by adrenalin solutions and later by boric acid insufflations at varying intervals of 1-3 hours. He removes the glands in all cases where there is marked obstruction, or when by pressure on the eustachian tubes the resulting symptoms are produced. Where a single attack has simply swollen the mass so that it slightly obstructs and then goes down without frequent repetitions of this character he allows the lesions to remain. Where there is a tendency to inflammation of a severe type he always removes.

E. F. Crofutt.

The Cutaneous Manifestations Observed in Rheumatism in Children (Monthly Cylopedia of Practical Medicine) by Jay F. Schamberg, M. D.—The eruptions most frequently observed are exudative erythemaei muliforma usually of the gyvate or papular form; erythema nodosum, scarlatina form erythema, urticaria and forms of purpura. This group of eruptions may be called into existence by a variety of causes: bacterial and protozoal toxins, ptomaines, leucomain and other metabolic poisons and drugs. Most of these rashes may be encountered in various infectious diseases.

Very infrequently herpes simplex has been found. Sudaminous vesicles are frequently seen as also are miliaria. Sudaminous vesicles are believed to terminate in miliaria rubra. Urticaria also is uncommon. Strumpel reports several cases of hemorrhagic urticaria. Erythema nodosum and erythema multiforma are both toxic affections and therefore may be produced by a variety of poisons. The rheumatic infection constitutes one of the most frequent poisons capable of producing the disease. Purpura orpeliosus rheumatica occur more often in rheumatism than in any other infectious process. In conclusion would say that while erythema nodosum and purpura rheumatica appear to bear more of a relationship to rheumatism than any other infectious malady, yet they can scarcely be regarded as pure and essential rheumatic processes. There would seem therefore to be no genuine rheumatic cutaneous manifestations save nodules and these are not cutaneous.

Maxmillian Zigler,

Ear Disease in Infancy and Childhood— (The American Journal of Obstetrics and Diseases of Women and Children, April, 1908)—Joseph A. Keneflick, M. D., N. Y. City.—The writer notes the very recent development of scientific investigation and treatment in the field of otology, and comments on the ignorance of the laity, to which he attributes the abuse of the so-called "home remedies," among which he enumerates camphorated oil, carbolic acid and tincture of iodine.

The writer states that for 1,300 years from the time of Galen no advance whatever was made in the study of otology. He quotes Wilde in 1853 to the effect that all aural affections were considered only with regard to one symptom, deafness; and Roosa in 1873, that ten years before that date "in this country the practice of otology was confined almost exclusively to charlatans."

The necessity of education is urged and the danger of the nasal douche and syringe in producing acute otitis is pointed out. The practice of stuffing the ears with cotton is condemned.

The writer next shows the advisability of guarding infants and young children from exposure to the exanthemata which are so liable to aural complications, and points to the discharge from a chronic purulent otitis as a spreader of the infection which originally gave rise to the ear disease.

"Heredity" plays but a small part in ear diseases and should never be made the excuse for neglect of treatment.

The writer divides the otitis of children into two classes, (1) that due to a constitutional dyscrasia, tuberculosis or syphilis, and (2) that caused by direct extension of infection from neighboring structures. The second group includes the vast majority of the cases.

The deleterious effect of enlarged tonsils and adenoids is described, the adenoid causing trouble both by mechanical pressure and by circulatory disturbances. The early recognition and correction are urged.

The presence in the middle ear during the first year and a half of life, of primitive lymphoid jelly makes conditions ideal for development and growth of micro-organisms.

Adenoids should be searched for, in the absence of gross evidence, in older children who are the subjects of recurring earaches or periods of impaired hearing.

It is the custom of the writer at the New York Foundling Hospital to open the ear drum freely. Frequent irrigations with hot salt solution by means of a hand syringe usually result in cure in from ten days to two weeks.

The opinion is expressed that an acute otitis is not a contraindication to the proper removal of adenoids or tonsils.

In the hands of the writer this line of treatment has not in five years been followed by mastoiditis, when the case has been observed from the onset of the otitis.

John B. Rae.

Simple Anemia in Children— P. F. Barbour (The American Practitioner and News, April, 1908) says that this condition is so common that it has come to be considered normal in children, that among its causes are ligating the cord before pulsation has ceased; the results of toxins of indigestion, certain drugs, as chlorate of potassium, lead, or sewer gas, the contagious diseases, chronic nephritis, rachitis, syphilis, rheumatism, tuberculosis especially of bones and lmphatics.

This anemia is frequently overlooked as the cheeks may be red, without being a fair index of the blood, the mucous membrane should be watched. Certain symptoms are generally present. The child looks poorly nourished, muscles soft and flabby, is fretful, variable appetite, poor digestion, bowels sluggish and with cold and clammy extremities.

The pulse is rapid and feeble, hemic murmurs are present and oftimes a venous hum is heard over the larger vessels. The child takes cold easily.

He is of course in favor of the best treatment in almost any form that is well borne. Careful attention to the diet, fresh air sunlight are most necessary.

As the function of the red blood cells is to carry oxygen to all the tissues, it will be seen that if they are diminished the tissues are deprived of the necessary nutrition and growth, as evidenced by the feebleness and fatigue when the child has too much exercise, hence it will be seen, that anemic children should be kept still.

A. Jackson.

Tetanoid Conditions in Children and Hemorrhage in the Parathyroid Glands— J. Yanase (Wien. Klin. Woch., Sept. 26, p. 1157).—The writer applies the term "tetanoid." to conditions in which the peripheral nerves are hypersensitiv to galvanism ("spasmophilia"). He does not deal with cases of obvious tetany and laryngospasm. These tetanoid conditions are most common between the ages of 3 and 30 months. There is hyperexcitability of the nervous system and a tendency to convulsions and muscular twitchings. The sensitiveness to galvanism is practically pathognomonic. Von Pirquet distinguishes two groups, viz, one in which the anodal opening contraction occurs with a current of less than 5 milliampères, and another in which the cathodal opening contraction requires less than 5 milliampères.

The four parathyroid glands normally lie in pairs, each of which is situated on the posterior surface of each lateral lobe of the thyroid gland. Structurally they consist of columns of epithelium imbedded in a stroma, which, in children, is exceedingly scanty and delicate. They thus differ entirely from the thyroid gland. Erdheim has shown that in children hæmorrhage into their substance is the most frequent pathological change.

The writer examined the parathyroid glands post mortem microscopically in 89 cases in which hypersensitiveness to galvanism had been previously found. In 33 (37 per cent.) there were hæmorrhages. These hæmorrhages usually occur early postpartum, or, possibly, intrapartum. In the first 2 weeks postpartum the parenchyma is found to be ploughed up by extravasated blood. Later the extravasation becomes encapsuled in a characteristic manner, cystic spaces filled with blood being formed. These are then invaded by phagocytes, and pigment is deposited in the surrounding connective tissue. The blood cysts become gradually smaller, and at the end of a year, have usually completely disappeared without the formation of cicatrices. For some time afterwards hæmorrhage can be diagnosed by the presence of blood-pigment containing iron in the surrounding connective tissue. The oldest child in which such traces were found was 5 years old. Parathyroid hæmorrhage may also occur in older children. Thus the writer found recent hæmorrhage in a child aged 12. The etiology and significance of this late hæmorrhage is, like that which exceptionally occurs in adults, unknown.

Fifty children were examined as to their sensitiveness to galvanism. In all the 13 cases in which it was normal the parathyroid glands were normal. But in every case of parathyroid hæmorrhage there had existed either galvanic hypersensitiveness (22 cases with anodal hypersensitiveness and 13 with cathodal), or convulsive symptoms. Galvanic hypersensitiveness may be present although post-mortem the parathyroid glands may be normal. This was found in 18 of the 50 children. Every one of these, however, was more than 1 year old, *i. e.,* of an age at which every trace of previous hæmorrhage may have disappeared. In those children under 1 year old hæmorrhage was invariable.

Erdheim assumes that the function of the parathyroid glands is to neutralize some toxic metabolic product which has a special action on the nervous system. If their function is suppressed tetany results. Total extirpation of the glands is followed, both in man and animals, by typical tetany. In hæmorrhage into the glands their function is inhibited but, usually, not entirely suppressed. Every gradation between simple galvanic hypersensitiveness and typical tetany may thus be produced, but as marked tetany may exist without total destruction of the glands an abnormal production of the tetany toxin probably co-operates in its production.—The Medical Review.

Aseptic Meningeal Effusion with Intact Polynuclears in Suppurative Otitis Media—M. RIST (Bulletins de la Soc. Med. des Hop., July 25, p. 846,) frequently examined the cerebrospinal fluid by means of lumbar puncture in children suffering from meningitis secondary to chronic otitis media. In a majority no microbes could be demonstrated by direct examination, by cultures, or by inoculations, although the fluid was purulent and contained abundant polynuclears, as in the most typical cerebrospinal meningitis. In a few cases in which a necropsy was made a localised patch of purulent meningitis containing the ordinary bacteria of aural infections was found in the temporal region. The remainder of the meninges, cerebral and spinal, was intensely congested. The writer thought that the bacteria remained confined to the localized zone but produced inflammation at a distance by their toxins.

E. de Massary and Pierre Weil (*ibid.,* Oct. 11, p. 982). Cases of meningeal reaction with puriform but aseptic cerebrospinal fluid are becoming numerous. The condition is most frequently observed in syphilitic affections of the central nervous system, such as meningo-encephalitis, meningo-myelitis, tabes dorsalis, general paralysis. The writers have observed the following case.

A man, aged 41, was taken to hospital on Aug. 12 in a state of obmutescence. He answered questions only by a murmur comprehensible with difficulty. Eighteen days before he began to complain of tinnitus and tingling in the left ear. Ten days before he became deaf and 4 days before he began to pass into a state of torpor.

He appeared to suffer from intense headache, for he constantly put his hands on his forehead. There was general muscular rigidity; the neck was rigid and Kernig's and Babinski's signs were present. The left pupil was smaller than the right. The meningeal streak was obtained. There was no aural discharge. The temperature was 102° and the pulse 64. On Aug. 15 there was an abundant discharge of greenish pus from the left ear. On the 24th improvement began. On Sept. 1 the temperature was normal and the patient answered questions. Convalescence was interrupted by an attack of mastoiditis which yielded to paracentesis tympani.

Lumbar puncture was repeatedly performed and yielded a puriform liquid. Cytological examination showed almost exclusively intact polynuclears. Films, cultures, and inoculation experiments never revealed any bacteria. As recovery took place the polynuclears were gradually replaced by lymphocytes.

An aseptic meningeal reaction consecutive to suppurative (septic) otitis media may be explained, according to the hypothesis of M. Rist, by a localized zone of infection producing inflammation at a distance by means of toxins. These observations show that however violent a meningeal reaction, if the puriform fluid contains intact polynuclears its aseptic character can probably be inferred even without bacteriological examination. The prognosis is much less serious than in septic meningitis. In the case related above the clinical examination pointed to a fatal termination, but recovery took place.—The Medical Review.

Inner Genital Tuberculosis in Early Childhood- HOHLFELD (Zentralbl. f. Gyn., No. 23, '07) examined two children postmortem. The first, aged three, had its father and a brother die of tuberculous disease. She had been taken into hospital seven months before death suffering from vomiting. Tuberculous peritonitis and enteritis were correctly diagnosed. Autopsy showed advanced tuberculous disease of the cervical, bronchial, mediastinal and mesenteric glands, and a few foci in the liver and in one lung. The intestines and peritoneum were much involved. The Fallopian tubes were thickened and bore prominent yellow swellings; miliary tubercles were found not only in one ovary, but also in the uterine muscularis and mucosa. The second autopsy was on a child of nineteen months, an only child of a father said to be delicate and of a mother who died in the puerperium. The child had itself undergone a successful operation for tuberculous disease of the fingers and metacarpus, dying, after recovery from an attack of double pneumonia. Necropsy showed miliary tuberculosis of the spleen, liver and peritoneum, a caseous bronchial gland and a tuberculous ulcer of the colon eight inches below the ileo-caecal valve. The uterus, as in the first case, was distinctly involved in the general disease, the endomtrium, in a state of caseation, breaking down into the uterine cavity. The right ovary was converted into a tuberculous mass the size of a hazel-nut.—The Med. Times, April, 1908.

Congenital Hypertrophic Stenosis of the Pylorus and Its Medical Treatment— (The Lancet, March 14, 1908).—The history of one case is given by G. CARPENTER, who notes that the records of surgical treatment of this complaint show that the infant does not readily tolerate plastic operations on the abdominal viscera, and believes that in time to come we must look on surgery as the last resort. Much attention attaches to the detection of the pyloric tumor. The treatment must be conducted on the same general lines as have been approved in the uncomplicated spasmodic cases. Carpenter has very little faith in the usual antispasmodic remedies and believes that the question narrows itself down to the proper regulation of the diet and its selection with reference to the requirements of each individual child. Regular meals are no less important than restricted meals, and not only are meals that are too bulky to be carefully avoided but the meal must be administered slowly. The dyspeptic infant becomes an inveterate food-bolter, and a meal that is dumped down into the infant's stomach is bound to disagree. The man who is in a hurry to change the dietary because the infant's stomach does not immediately respond to his treatment will never succeed. Success can only be compelled by shaping a course and intelligently sticking to it. It will be found on inquiry that those who claim that they have tried everything have really tried nothing. Ringing the changes on a variety of foods invites dyspepsia, it does not cure it, and such panic-bred dietaries must be avoided. Abdominal massage in the direction of the pyloric outlet has proved efficacious in at least one case. But in regard to topical treatment gastric lavage has a well-merited reputation. Thorough stomach washing with warm normal saline solution should be used twice a day until the complaint shows decided signs of improvement, when it may be tried once a day. That the remedies are working satisfactorily can be seen by the improved condition of the stools. And there are two other precautions that must be taken—viz.: to keep the infant's stomach warm and not to upset his digestion by starchy foods.—Med. Rec.

Fat Absorption in Infants—(Münchener Med. Woch., Mar. 8, 1908)—Schelble proposes the following method for obtaining an objective guide to the efficiency of fat absorption in infants, though the plan may also be resorted to in the case of adults. Several drops of blood are obtained in the usual way, in infants by puncture of the great toe, and are placed in a tube of 3 mm. diameter which is immediately put in the centrifuge. By means of a platinum wire the fibrin is loosened from the wall of the tube or is carefully drawn out, and the centrifuging is continued. The serum from a fasting individual is clear, but that taken shortly after a meal containing fat is more or less cloudy, owing to the presence of minute fat droplets. The author recognizes five grades of this appearance: Very fairly cloudy, slightly cloudy, cloudy, very cloudy, very heavily cloudy. It is important not to break up any red cells in performing the test as the presence of a red tinge to the fluid makes accurate estimation of the cloudiness very difficult.—Med. Rec.

Infantile Splenic Infection with Leishman-Donovan Bodies— C. Nicolle and E. Cassute (Press Méd., Feb. 8, 1908) describe some observations made by them in cases of splenic infection in children similar to the so-called kala-azar which is seen in adults in tropical countries. This rare disease begins with fever, progressive anemia, extreme emaciation, digestive troubles, and hypertrophy of the spleen. In the spleen, liver, marrow of the bones, and glands is found a parasite called the Leishman-Donovan body. It consists of a rounded, unpigmented organism, having two chromatic bodies within it. It is found within the cells. Diagnosis of the disease can be made only by puncture of the liver and examination of the specimen obtained. The disease is not found in France or other European countries. But the authors have observed similar symptoms and similar parasites in a small number of cases among children in the French possessions in Africa, and consider it possible that cases may be imported from there into France. The disease observed by them attacked only children under two years of age. It was fatal in every case so far observed. The author believes that there is a special form of infection of children of the Mediterranean region similar to kala-azar, from which it is to be distinguished by the age of the victims, and which is identical with splenic anemia of children.—Am. Jour. of Obstet. and Diseases of Women and Children, April, 1908.

Therapeutic Use of Soured Milk– The use of soured milk, says Haven Emerson (N. Y. Med. Jour., Feb. 8, 1908), is based on three distinct properties: 1. The fact that pathogenic bacteria do not thrive in a medium that has a marked degree of lactic acid. 2. The process of carbohydrate and proteid disintegration occurring in the souring of milk makes a softer and more digestible and smaller casein curd, and a carbohydrate in a state of partial digestion. 3. Lactic acid activates peptic secretion and digestion. The use of soured milk is indicated broadly as a preventive against the putrefactive process of proteid disintegration in the digestive canal. The value of soured milk depends upon the purity of the original supply, the promptness and cleanliness of its subsequent handling, the constancy of the amount and quality of the dose of the "starter," or activating combination of yeast and bacteria, the limitation of the resultant fermentation at the proper point, and the subsequent care of the milk at a constant low temperature. Probably the inoculation with bacteria should be accompanied by inoculation with known cultures of yeast. The yeast is necessary: 1, To inhibit the overgrowth of pathogenic and putrefactive bacteria; 2, to add flavor which cannot be obtained without it, presumably by the production of aromatic substances such as esters; 3, to attack milk sugar after lactic acid has been formed in the milk, and produce alcohol and carbonic acid gas, which are valuable assistants in the digestion and absorption of milk and in making milk tolerated by irritable and congested mucous membranes.—Am. Jour. of Obstet. and Diseases of Women and Children, April, 1908.

Congenital Torticollis—By A. H. Tubby (Practitioner, January, 1908).—A review is here given of the paper by E. H. Bradford and J. W. Sever, who advance the theory of Nové-Josseraud and Vianny. They believe that hæmatoma of the sternomastoid is not the sole cause of congenital torticollis, and advance an ischæmic explanation. The sternal head of the muscle receives normally a smaller amount of blood than that supplied to other parts of the muscle, and, with the head flexed and rotated to its usual position in utero, this blood-supply is diminished or cut off, from pressure on the small vessel which passes from the superior thyroid artery to supply the sternal head. This causes muscular degeneration, with subsequent sclerosis and contraction. On examination after autopsy in children affected, the muscle presents a waxy hyaline appearance, with interstitial myositis, exactly similar to that got in Volckmann's ischæmic paralysis of the limbs.—Glasgow Med. Jour., March, 1908.

Seroimmunization and Serotherapy in Measles— Cenci Francesco (Riv. di Clin. Ped., Dec., 1908) describes his researches in an epidemic of measles as to the possibility of producing immunity by the injection of serum from a recovered case of the disease. He injected four children with the blood serum drawn from the veins of a healthy man who had recovered from measles. The brothers of these children were not injected. All the children being exposed to the disease in the same surroundings, none of the injected children had the disease while the other did take it. This immunity continued for four months. In an epidemic of measles four years later these children did contract a light form of the disease showing that only a temporary immunity was obtained. One of the children was vaccinated with the scales from a case of measles, but this had no effect. The author also injected cases of measles with antidiphtheritic serum to observe the results. Fever was lessened and shortened, there was a cessation of the inflammatory symptoms referable to the respiratory organs, and the general condition improved. In a case of bronchopneumonia with much prostration the child was feverless after forty-eight hours and was soon cured. Here antimorbillous serum was injected at the same time with the antidiphtheritic serum.—Am. Jour. of Obstet. and Diseases of Women and Children, April, 1908.

Otitis Media and Its Treatment—E. C. ELLETT (Amer. Jour. Med. Sci., Jan., 1908) advises the use of a head-mirror of about eight-inch focus and a large opening. Unless wrapped in a sheet, children should be held in the following manner: To examine the right ear, seat the child sideways on the nurse's lap, with its left side against the nurse's body. Pass the child's left arm around the nurse's body under her right arm. The nurse's right hand grasps the child's right hand and right thigh, holding both firmly, with the thigh flexed on the body. The nurse's left hand is pressed on the child's right parietal region above the ear, and the head is pressed firmly against the nurse's body. A child's ears should be examined, leaving out of consideration the very obvious cases when the patient complains of a pain in the ear, daily, or at least frequently, in measles, whooping-cough, chicken-pox, pneumonia, and acute bronchitis. In scarlet fever, and febrile conditions of obscure and not readily explained origin, the ears should be examined daily. A sudden rise of temperature in scarlet fever is often of otitic origin, and suppuration may occur without complaint on the part of the patient of pain in the ear. Acute otitis media may simulate serious meningeal or gastro-intestinal disturbance. If the drum is simply red, inspection of the nose and throat, renewed care of the skin and the secretions, protection from cold, and possibly inflation with the Politzer bag would be in order, and if any pain is complained of, a warm application to the ear is grateful. This may vary from a shawl or warm flannel pad to a hot water bag. If the drum is red and bulging but the fever is not alarmingly high and there are no complaints or evidence of pain and no cerebral or gastro-intestinal irritation we may temporize. The nose and throat should be cleansed with a warm alkaline spray or douche, the bowels opened with calomel and the child protected from exposure. To the ear we can apply dry heat continuously or moist heat by water at 110° to 115° F. run into the ear from a fountain syringe one or two feet above the latter, using about two quarts each time, then drying the ear and applying heat externally. If drops are used the writer would prefer warm 10 per cent. carbolized glycerin to the usual mixture of laudanum and oil. He often gives a single full dose of opium. If these measures fail to relieve in twelve hours or if the symptoms are severe when first seen the drum should be incised under general anesthesia or local anesthesia with a mixture of equal parts of cocaine, menthol and carbolic acid applied with cotton on an applicator. After incision, or if a discharge is coming from the ear when first seen, sterile cotton should be kept in the ear and changed frequently, syringing with boric acid only if the discharge becomes thick. Sudden elevations of temperature to 104° or 106° F. with intermissions of apparent health after sudden falls to normal suggest primary thrombosis of the jugular bulb. These or mastoid pain or persistence of pains or temperature after the ear has begun to discharge, call for expert advice.—Am. Jour. of Obstet. and Diseases of Women and Children, April, 1908.

Bacterial Infections of Urinary Tract in Childhood—Though bacilluria in children may be due to infection through the blood stream or by contiguity, its common cause, says C. R. Box (Lancet. Jan. 11, 1908), is an ascending infection. The chief arguments in favor of this view are the sex incidence of infections of the urinary tract, the larger number of cases occurring in females in whom the urethra is shorter and nearer the anus than in the male, the absence of evidences of renal damage, and the frequent finding of bacillus coli as the exciting cause in bacilluria associated with typhoid fever, scarlet fever, measles and diphtheria. Ascending infections are more common in childhood than is ordinarily supposed and the colon bacillus is the usual cause, hence the necessity of avoiding infections from soiled napkins. The possibility of the presence of pyelitis should always be borne in mind when dealing with cases of obscure fever in childhood, whether of a sustained, remittent, or relapsing character. The occurrence of shivering or of rigors should especially direct attention to the urine and urinary tract. More than one specimen of urine should be examined, as it is not every portion obtained which shows characteristic changes. Cystitis is not uncommon in children. Its onset is usually sudden and not attributed to any definite cause. Pain is referred to the hypogastrium, fronts of the thighs, or perineum. It is important to recognize that the urine may be acid in both pyelitis and cystitis, especially when the infection is due to the colon bacillus. Incontinence of urine often very obstinate, may be associated with bacilluria, the bacillus coli being the most common organism. In such cases the presence or absence of thread-worms should always be determined. The writer had been disappointed in their treatment with belladonna, drugs of the formalin type, cathartics, salol and others. The antibacillus coli serum after three injections stopped the incontinence in one case though the bacilluria continued. A month later the patient relapsed to one incontinence a week. In another patient serum treatment by subcutaneous injection and by rectum and vaccinations were ineffectual.—Am. Jour. Obstet. and Diseases of Women and Children, April, 1908.

The Prophylaxis of Ophthalmia Neonatorum—Lewis F. Park (Am. Jour. Ophthalmology)—After giving a history of the treatment of ophthalmia neonatorum, and showing the great results obtained by careful treatment the writer gives the following conclusions:

1. That the responsibility for the control of ophthalmia neonatorum rests with the state and should find its expression through the department of public health.

2. The duty of pointing out its dangers, its prevalence, its prophylaxis and its treatment and suggesting measures for its relief through the proper channels remains with the medical profession.

3. To wipe out this disease as a cause of blindness the public must be better informed concerning it, through various social organizations, the material coming from some authoritative body like the American Academy of Ophthalmology.

4. To accomplish effective work a concerted effort should be made to secure uniform laws governing the midwives in the several states and in federal territory, such as exists in many European countries, and putting them under the surveillance of the department of public health. If the midwife is to be held responsible for a failure to employ prophylaxis it is only just that a pure and safe preparation should be put in her hands. The centralization of the authority for the control of the midwives in the state department of health would contemplate an examining board and registry in every county of each state.

"A disease occurring sporadically and which is endemic can be controlled only by organized and concerted effort. It is most important, therefore, in order that no false move be made, that the procedures to be determined upon should originate with the ophthalmologists and obstetricians. Their practicability must be assured by those expert sanitarians engaged in public health work. Then the measures recommended should be carried out by an organized movement in every state in the Union. A state committee should be appointed and through this should be secured the appointment of a like committee in each county. This latter body would ultimately become the board of examiners for midwives. It would be most desirable if in every instance the local health officer should be a member of this committee. Such a general and concerted effort made throughout the country would in a comparatively short time so limit infections and improve methods of treatment that the disasters following ophthalmia neonatorum would practically cease—that this prolific cause of blindness would be controlled—millions would be saved to the commonwealth and happiness and efficiency of humanity enormously augmented."—Jour. Mich. State Med. Soc., March, 1908.

In the March issue of Pediatrics, the report of the section on Pediatrics of the Kings County Medical Society interests me very much because Dr. J. M. Winfield's article started a discussion on the availability of talcum as a skin application. Dr. Hutchinson said, "He was opposed to the use of talcum, not only in eczema, but on the skins of healthy children as well. In eczema, he said, the talcum, after a few hours, is rolled up into masses with the secretions, and these must be irritating." Dr. Winfield had said, "If the child is fat or flabby, talcum, lycopodium or rice are to be used as dusting powders. Of these talcum is the best because of its mineral nature; for vegetable powders, when decomposed offer an excellent medium for the growth of bacteria."

Thus are both starch and talcum condemned and leaves the field open to the stearates which are chemical combinations of fatty acid and mineral base. The stearate of magnesia [$Mg (C_{18} H_{35}O_2)_2$] I have been personally interested in promoting for ten years because it does fill the gap and does the work that neither starch or talc can do. It does not cake or form pasty rolls when in contact with serum or discharges. Ten years of use in a large number of infant institutions has absolutely demonstrated its advantage and marketed under the name of Pulvola and Dolomol (medicated) it has received the attention of many of the profession.

P. H. Fairchild, M. D.

In the April issue of the Medical Bulletin appears a report on Chinosol giving some very interesting bacteriological data, results of experiments made by Dr. Horace W. Patterson, Bacteriologist connected with the Department of Health of this city. From this report it would seem that Chinosol is an antiseptic and germicide of no mean value, inasmuch as it appears to be superior to carbolic acid and to rival even that standard germicide, bichloride, not only in antiseptic, but also in disinfectant power. What Dr. Robert T. Morris of this city says is of great interest. He there states that Chinosol possesses many advantages over bichloride in its non toxic features, and in avoidance of coagulation of albumin.

The highest German authorities, the Imperial Board of Health and the Royal Prussian Deputation of Medicinal Matters have officially pronounced Chinosol free from the dangers of poisoning, even in the hands of the laity. An antiseptic and germicide having these properties would seem to offer to the physician and surgeon a therapeutic agent with which he can work to great advantage and as such it would promise to come into well nigh universal use. The U. S. Dispansatory, Edition 1907, page 1444, confirms the above statements. It is there spoken of as highly recommended by Gilles and other in the treatment of vaginitis and in other affections of the female organs in the form of douches 1:1000 to 1:8000.

Prof. Webster (Text Book of Diseases of Women, 1907 Edition) recommends it as a dusting powder alone or mixed with boric acid and says that it is better than idoform.

BOOK REVIEWS.

THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS. By Francis M. Pottenger, A. M., M. D. Monrovia, California. Medical Director of the Pottenger Sanitorium for Diseases of the Lungs and Throat, Monrovia, Cal.; Professor of Clinical Medicine, Medical Department, University of Southern California; Chief of Medical Staff of the Helping Station of the Southern California Anti-Tuberculosis League, Los Angeles, Cal.; Fellow of the American Academy of Medicine; Member of the American Climatological Association; Member of the American Therapeutic Society; Corresponding Member of the International Anti-Tuberculosis Association, etc. 377 pages, cloth, $3.50. Wm. Wood & Co., New York.

Among the many books that have recently appeared treating on the subject of tuberculosis, this volume easily ranks first. The author has treated his subject from many different standpoints, but he has endeavored to give a full discussion to the diagnosis, both early and late, and has taken up the treatment in the light of modern studies in immunity. He differs with many other authorities, but his explanations are usually clear.

The author states that tuberculosis is a disease caused by a specific micro-organism, and like all such diseases, is cured by the establishment of immunity. Many valuable suggestions are given for diagnosis and one of the author's own, he terms "auscultatory stroking." He describes it as follows:

"The stethoscope is placed over the organ to be outlined, at some distance from the boundary to be mapped out. Then instead of percussing, as in the previous method (auscultatory percussion), I draw the end of the finger gently across the skin, first at some distance beyond the border, then by coming nearer and nearer and nearer, the border will be easily detected by the decided increase in the conduction of the sound when it is reached. This method of examination is so delicate that the outline of the lobes of the normal lung can easily be made out, owing to the fact that so slight a change in density of tissue as the sulcus dividing the lobes interferes with the transmission of sound. I do not think the value of this method is sufficiently appreciated or it would be more generally used. Not only can it be used in outlining organs, but also in outlining a pneumothorax or pleural effusion, and differentiating the latter from liver or lung dullness. Cavities and infiltrations can also be differentiated from the surrounding tissue, and the boundaries of the stomach from the intestines. It is very important to remember that the stethoscope should not be placed too near the boundary to be outlined, because the nearer the stroke to the stethoscope the louder the sound. Consequently the difference will be noted much easier if the stethoscope is at least two or three inches away."

The author also discovered elastic tube percussion, which he describes as follows: "Instead of using a percussion hammer or finger, with which to percuss the chest in this method, we use a piece of rubber tubing of a convenient length, say 4 or 5 inches long, and deliver the stroke directly upon the surface of the chest, allowing the tubing to remain in contact with the surface after delivering the blow. It makes quite a difference in the sound elicited whether a soft elastic tube or one with rigid walls is used. The former gives more or less of a dead sound, while the latter one emits a tone."

Speaking of the principles underlying the treatment of tuberculosis he says: "Perhaps there is no other serious disease so curable as tuberculosis if treated early, and few more fatal if allowed to extend. It is within truth to say that 65 people out of every 100 have tuberculous foci in some organ or organs of the body sometime during their lives, and yet only about 12 or 15 out of every 100 die because of their tuberculosis. This means that tuberculosis proves fatal in scarcely 20% of the instances in which infection has occurred. The cure of tuberculosis consists in establishing upon the part of the affected organism an immunity to the tuberculous bacillus and its toxins. While the open air treatment of tuberculosis marks one of the greatest advances in modern therapeutics, still it is not a specific, but it will work marvellous changes in patients who are taken from the common walks of life, with their unhygienic methods of living. It hardens the patient and improves the nervous system, as well as digestion and assimilation. It lessens the danger of new and secondary infection and lessens the temperature."

The author believes in the specific treatment of tuberculosis, and uses tuberculin in many of his selected patients. He is convinced of its value and as early as 1903, in ten selected first-stage cases, ten were cured. He believes that hyperemia (Bier) has a decided value in the treatment of tuberculosis and of the sanitorium treatment of tuberculosis says: "A sanitorium is simply a reflection of the man who is at the head of it, and whether it succeeds or fails depends upon him."

He states that while the climate is always important, that there is no specific climate for tuberculosis and that "a good use of bad climate is better than the bad use of good climate." He believes that there should be candor between the physician and the patient; the patient must know that he has tuberculosis.

Taking all in all this work is one that no intelligent physician can afford not to read. L.

An Index of Treatment.—By various writers, edited by Robert Hutchison, M. D., F. R. C. P., Physician to the London Hospital and Assistant Physician to the Hospital for Sick Children, Great Ormond street, and H. Stansfield Collier, F. R. C. S., Surgeon to St. Mary's Hospital; Joint Lecturer on Surgery in St. Mary's Hospital Medical School; Surgeon to the Hospital for Sick Children, Great Ormond Street. Revised to conform with American usage by Warren Coleman, M. D., Prof. of Clinical Medicine and Instructor in Therapeutics in Cornell University Medical College; Assistant Visiting Physician to Bellevue Hospital, New York. William Wood and Company, 1908.

The contributors to this work are among the most eminent medical men in Great Britain and it is quite unnecessary to say that they have done their work well.

Dr. Coleman states that he has had but little to do but to adapt the English prescriptions to the United States Pharmacopeia.

The object of the book is to provide the practitioner with a complete guide to treatment in as compact a manner as possible, and to avoid embarrassing the reader with a large choice of procedures; having this in view the contributors have selected such methods as seem most effective. Of course major surgical operations requiring special skill have been but lightly touched upon but much detail has been given to union surgical and nonoperative conditions.

The subjects are arranged alphabetically, a most convenient method.

Dr. Cathcart suggests that when the nasopharynx of a child is so sensitive that it is impossible to examine it, a mixture of Bromide of Potash, Fowler's solution and chloroform water be given for a few days, when the extreme sensitiveness will be found to have disappeared. He also says that in operating for adenoids, that the forceps are superior to the curette, that when the former is used, the patients do not complain of pain and soreness at the back of the neck. Of diphtheria, the writer urges the early use of antitoxin but in a smaller dose than we use in this country and says that next to antitoxin rest in bed is the most important measure, for ten days or two weeks *after* the disappearance of the exudate in the mild cases, and much longer in severe ones. This procedure is not often followed strictly, but it should be.

The writer on Pneumonia does not mention the open-air method, but offers the valuable suggestion that when the patient is very ill and the tongue is dry and brown, hypodermic medication is indicated.

The work contains many practical ideas and the appendix has brief descriptions of preparations common in Great Britain but unknown here.

The Index of Treatment is commended to our readers.

CHRISTIAN SCIENCE. The Faith and Its Founder. By Lyman P. Powell, Rector of St. John's Church, Northampton, Mass. Pp. xviii.-261. New York and London: G. P. Putnam's Son, The Knickerbocker Press. $1.25.

It is said that at one time the author was inclined to favor Christian Science or rather did not oppose it. He then saw that it tended to drive people from historic Christianity and after a most careful investigation of the whole subject he has arrived at definite conclusions. He is convinced that Mrs. Eddy is not the founder of Christian Science; its philosophy is, as Dr. Elwood Worcester says "like the writing of a philosopher suffering from acute softening of the brain," and that "mistaking pseudo-scientific terminology for scientific truth, they give to people who may be informed in everything but science, conceptions which would crowd out of even the most spacious mind every fact that science has discovered and every generalization that science has established."

Its influence on the morality of family life is apt to grow detrimental. Mrs. Eddy is somewhat an authority on matrimony and says of marriage "it is often convenient, sometimes pleasant, and occasionally a love affair" and in answer to the question "Is marriage nearer right than celibacy?" replies "Human knowledge inculcates that it is, while science indicates that it is not." Again she says that "marriage is the only legal and moral provision for generation among the higher species" and then "generation rests on no sexual basis." Ten years later she remarks that reproduction is due to belief and adds, "The propagation of their species by butterfly, bee, and moth, without the customary presence of male companions, is a discovery corroborative of science of mind."

As to healing, we all know that Christian Science therapeutics has never stood investigation for it is found that most of those cured of cancer, tuberculosis, etc., have made their own diagnosis.

Finally the author says that its philosophy is false, its attitude to religion injurious, its effect on health bad and its relation to marriage and the family full of danger. It is the opinion of the reviewer that medical men should realize the dangers of Christian Science; its menace to the health of the community.

I quote from Mark Twain, "Love, Livers, Lights, Bones, Truth, Kidneys, one of a series, alone and without equal—it is beyond imagination for wonder." F. W. L.

PEDIATRICS

Vol. XX JUNE, 1908 No. 6

ORIGINAL ARTICLES

ANATOMICAL OR PHYSIOLOGICAL AGE: VERSUS CHRONOLOGICAL AGE.

C. WARD CRAMPTON, M. D.

ASSISTANT DIRECTOR OF PHYSICAL TRAINING; NEW YORK PUBLIC SCHOOLS.

Thesis. Physiological age should be taken as a basis for all record, investigation and pedagogical, social or medical treatment of children.

Evidence. The term anatomical age or physiological age refers to the stage of development in contradistinction to our usual method of age designation—chronological age.

Individuals of the same species vary in their rate of development, so that any chronological age group will contain some developed far beyond the average and others retarded considerably more than the average. Those who are retarded may take

---

For the continuance of this investigation the author is indebted to the assistance rendered to him by the Committee on the Physical Welfare of School Children, 105 East 22nd Street, New York City.

years to develop to the same degree as the average individual of their age group. Those who have been most rapid in development may have passed the average stage of development years before. Hence there is a wide variation in individuals, for development means change of bodily characteristics.

Where development is particularly rapid we still observe a considerably greater variation among individuals of the same age. Thus, at the rapid development at the so-called age of puberty there is the greatest variation in physical and mental characteristics.

The child is essentially different from the adult as the larva is from the imago, yet we have not recognized this fact where it is most important that we should. There are both the immature and mature forms present at all ages from ten to seventeen, yet we have *without exception* classified all children on the chronological age basis.

It is vastly more important for us to know how far a child has developed, and what he *is,* than to know merely how many years and months he has lived, although the latter fact will always have a relative significance.

The present work is concerned in demonstrating as accurately as possible exactly how much more significant physiological age is than chronological age, at one particular epoch, and in providing an objective basis for observation, with the faith that there will result therefrom a complete reversal of our method of thought from the chronological age basis to that of the physiological age.

The writer observed in 1902 that boys not yet pubescent (as to the pubis) were smaller and weaker than those who were pubescent. These results were presented at the Olympic Congress at St. Louis in 1904, and published in the American Anthropologist, October, 1905. This is a sign of puberty which is second only in reliability to the direct observation of the spermatozoon.

The data for this investigation are 4,800 records from school boys in a New York High School. This school receives its boys from the elementary school at about the age of fourteen years and prepares them in four years (eight terms) for entrance to college or business. They represent all social classes and include a large variety of social mixtures.

Of the first 813 cases measured there were 286 with parents both born in the United States, 134 both born in Germany, 69 in British Isles, 70, one in United States and one in Germany, 61, one in United States one in Germany, 61, one in United States and one in British Isles; the others, including 40 both Russian and 37 both Austro-Hungarian, were scattered. About 25 per cent of all were Jewish.

It is easy to distinguish between a complete absence of hair and an abundance of the same and to designate the individuals as *pre pubescent* or immature, or on the other hand as *post pubescent* or mature, but the process of acquiring this growth is a slow one and one may often be puzzled to place an individual with but a beginning growth in either class. To eliminate this uncertainty an intermediate class was established and called the *pubescent* or maturing class. This class contained all who have anything more than an abundant lanugo and less than a very well defined covering.

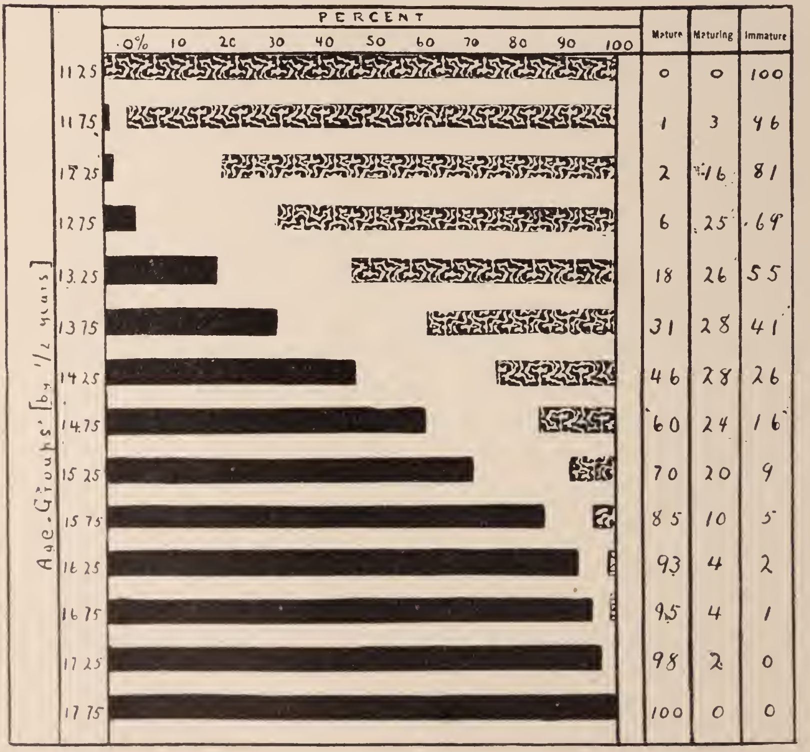
The designations "immature," "mature," etc., have reference to the epoch under immediate consideration and designate classes in respect to the secondary sexual sign, *pubescence*. There are other epochs and signs of physiological age such as the appearance of the various teeth, menstruation, menopause, ossification if epiphyses, etc., which are also vastly more significant than their related chronological ages. The values of the appearance of the canines and second molars as related to development have been investigated by me and will be presented at a later date.

Table No. 1 below gives the population of the half year groups 12.50-13.00 to 17.50-18 with reference to physiological age and demonstrates the important fact that the chronological age groups are not hemogeneous.

TABLE NO. 1.

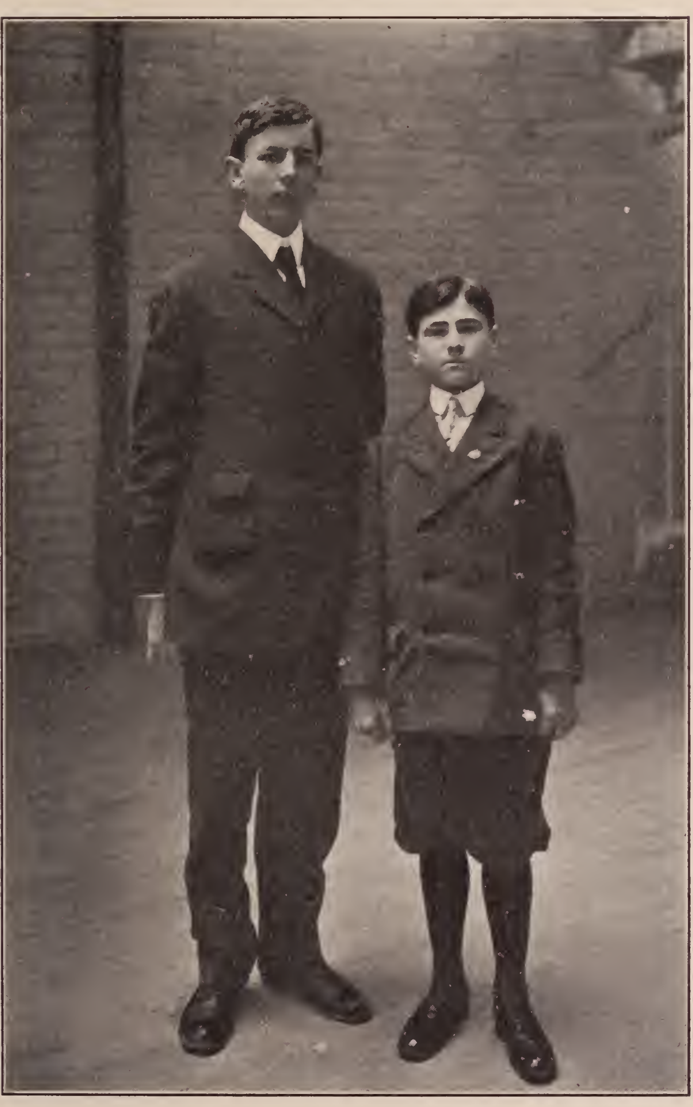
Age in Years.		Physiological Age Groups		
		Immature	Maturing	Mature
12.50	13.00	69%	25%	6%
13.00	13.50	55 "	26 "	18 "
13.50	14.00	41 "	28 "	31 "
14.00	14.50	26 "	28 "	46 "
14.50	15.00	16 "	24 "	60 "
15.00	15.50	9 "	20 "	70 "
15.50	16.00	5 "	10 "	85 "
16.00	16.50	2 "	4 "	93 "
16.50	17.00	1 "	4 "	95 "
17.00	17.50	0 "	2 "	98 "
17.50	18.00	0 "	0 "	100 "

Age Groups [by ½ years]



Mature—Black. Maturing—Blank. Immature—Hatched.

A typical mature and an immature boy of about the same age. The smaller immature boy is chronologically older.



Post Pubescent	Pre Pubescent
Age 15-10	Age 16-1
Wt. 143 lbs	Wt. 78 lbs
Ht. 5 ft 10	Ht. 4 ft 8
Str. 165 lbs	Str. 73 lbs

Percentage of Each Physiological Age Group for Each Half Year Group.

From this table it will be seen that up to 17.00 17.50 each age group has its varied constituency of immature and mature.

SIGNIFICANCE OF PHYSIOLOGICAL AGE IN TERMS OF STRUCTURE AND FUNCTION.

If the immature differed from the mature in no other way than this particular sign it would hardly be worth while to separate these groups. They do, however, differ radically, showing that there is a striking physical change in the progress from immaturity to maturity. At characteristic ages, the mature are more than 33% heavier, 10% taller, and 33% stronger than the immature, and are indicated by the following tables. (Later investigation now under way points to a much higher percentage of difference).

TABLE NO. 2.

Age in Years.	Average Weight in Kilograms. Immature	Maturing	Mature
12.50 13.00	35.2	36.6	(50.8)
13.00 13.50	35.0	37.2	44.3
13.50 14.00	35.4	37.9	43.8
14.00 14.50	35.2	38.6	45.4
14.50 15.00	36.8	39.0	47.2
15.00 15.50	37.9	38.8	47.7
15.50 16.00	36.7	41.8	49.3
16.00 16.50	(40)	38.3	51.6
16.50 17.00	(42.5)	(41.5)	53.5

From Table 2 it is evident that any statistics which do not include a reference to physiological age are faulty and incomplete in so far as weight and allied features are concerned. Practically all of our statistical work must be revised in the light of this evidence or disregarded completely.

TABLE NO. 3.

Age in Years.		Average Height in Centimeters.		
		Immature	Maturing	Mature
12.50	13.00	144.0	147.5	150.5
13.00	13.50	144.2	148.7	153.9
13.50	14.00	145.7	150.4	155.9
14.00	14.50	146.6	150.6	157.9
14.50	15.00	147.3	151.7	158.9
15.00	15.50	149.8	151.5	160.7
15.50	16.00	149.8	153.1	162.6
16.00	16.50	151.0	152.4	164.6
16.50	17.00	(153.)	(151.4)	165.4

Table 3 shows the different average heights of these three physiological age groups for each half year. The error of previous statistical work is clear, and the necessity of recognizing the basis of physiological age in grouping statistical and other records is thoroughly demonstrated.

The following table is of the strength of grip of the right hand taken with two bar double dynamometer:

TABLE NO. 4.

Age in Years.		Strength in Kilograms.		
		Immature	Maturing	Mature
12.50	13.00	26.6	28.2	(32.5)
13.00	13.50	26.3	28.1	33.6
13.50	14.00	27.6	30.4	35.2
14.00	14.50	27.3	30.2	37.8
14.50	15.00	29.4	30.8	38.3
15.00	15.50	29.6	31.1	40.1
15.50	16.00	32.5	30.4	42.9
16.00	16.50	31.7	29.6	43.8
16.50	17.00	(27.5)	33.2	48.3

Table 4 demonstrates again that the mature are radically different from the immature. These three tables present a reiteration of proof of the importance of this classification, upon which it is necessary to enlarge.

In view of these great physical differences, it is not at all surprising that there are demonstrable differences in mental abilities.

So far in our investigation we have obtained records only for high school boys, and have taken success in scholarship as an indication in mental ability. The immature boys at all ages fail in their ability to pass the work of any grade much more than those who are mature, although it is quite evident that school marks are not a reliable indication of any but a restricted and particular range of mental ability.

SIGNIFICANT FEATURES OF LIFE CENTERING ABOUT PUBERTY.

The features of weight, height, strength and scholarship which we have just studied are the indices of profound physical changes. An acceleration of growth rate means an upheaval of the whole frame. All organs are put under new conditions. It is a significant fact that morbidity increases at this period, though mortality does not. It is unnecessary to go further to emphasize the tremendous significance of the features of this period to the physician. A mere catalog of some of the changes asserted to take place at this time is pertinent.

Marro (La Puberté) catalogs in girls the pubic and axillary pubescence, development of the breasts and menstruation; also in boys pubic, axillary and labial pubescence. His series are too small for definite results. He also considers change of voice.

"At or about puberty" the bones increase rapidly in length and girth.* Moon finds that the legs increase most rapidly in length before puberty, the body afterward. West, Porter, Hedlicka, Peckham and Smedley found various results on this relative growth. Throughout the body various bones begin to show epipheses, and others show junction of epiphysis and shaft or body. Ossification is accelerated and completed, but by no means uniformly.

---

*Note. The following data are taken mainly from "Adolescence" ---G. Stanley Hall.

Note (1) The tables herein contained have been published in the Psychlological Clinic of June, 1907, and in the American Physical Education Review, March, April, May and June, 1908. The latter publication gives a full report of the investigation up to the present time.

Canine teeth, back premolars and second molars all have their period of change from 11 years to 16 years. The lower jaw grows longer and the head changes in many ways.

Before puberty the blood vessels are large and the heart small. The heart increases at this time at a far greater rate than the arteries. This is a most important point and may account for the increase of blood pressure at this stage and for the very characteristic functional affections of the heart. Sexual differences in blood count become evident at puberty, and anaemias of the chlorotic type are characteristic. The pulse rate is increased during puberty (?).

The "capacity" of the lungs is increased rapidly at this period. All the internal organs grow rapidly at this time; the kidneys and the liver seem to grow very slowly afterward.

The salivary and the sebaceous glands increase markedly in size and function at this period. Acne and comedones are characteristic. Pigmentation of all colored structures increases, the sexual organs and nipples with their areola become darker.

Boys lose fat, girls often grow thin but soon round out. Stratz classifies his physiological ages on this basis. He schedules "Erste Fülle," "erste Strechung," "zweite Fulle," "Zweite Strechung," and finally "die Reifung." The transition from the "zweite Strechung," to "die Reifung" corresponds to puberty.

My own observations, confirmed by my assistants, have substantiated this. A prepubescent has flesh of a tallowy feeling, and his cheeks are rounded, the post pubescent seems dried out. The skin is not so closely attached to the subcutaneous fat and seems more compact.

Right-handedness and asymmetries occcur and become accentuated; right-handedness and scholarship are correlated, according to Smedley.

Hall says "Puberty is like a new birth. It is the age of reconstruction when new determinants come to the front, and also the point of departure for new development.

It is the age, too, when, if ever, previous tendencies to abnormality may be overcome both by nature and by treatment. The law of nascent periods or the age curve of growth of each organ or faculty, is one of the first desiderata of genetic psychology; how to apply it, by what means and to what degree to stimulate each part in its stage of most and least rapid growth, and how to apportion training of mind and body—is one of the chief problems of individual pedagogy."

Turning to diseases which are characteristic of the ages of puberty, we find a rich field. Childhood diseases decrease, while rheumatism, disorders of bones, muscles, circulation, etc., increase. Goitre, anaemia, hysteria, epilepsy and a characteristic form of chorea, are stated to be characteristic diseases. "Growing pains" and minor attacks of rheumatism are rampant. It is stated by many authors that the morbidity of the pubescent age is high, while the mortality is low.

Nervous disorders, particularly chorea and stuttering, become marked. Appetite changes, becomes more fastidious, and shows many anomalies.

Functional heart troubles, shortness of breath, palpitation, dyspnoea, languor, feeble pulse and cardiac discomfort, irritability, inertia, sleeplessness are all cardiac symptoms of the pubescent period. Chlorosis and anaemia are notoriously characteristic, and nosebleed is a common symptom.

On the mental side we have a peculiar tendency to morbidity. The birth of the sexual impulse normally causes an upheaval of the whole mental life. Masturbation and other abuses assist in unhinging the weak mind. There are numberless forms of trouble taking their origin at this point. From simple day dreaming to the gravest form of dementia precox there is a series with countless members. Irregularities in conduct, obsessions, cravings, willfulness, hysteria in all its forms (particularly religious), phobias, blind impulses, sexual perversions are characteristic. It it probable that by far the largest portion of our insane cases begin their trouble at or about this time.

The period of pubescence is essentially the home field for the physician. It cannot be too carefully studied, and no means may be neglected whereby we can determine objectively its regularity or irregularity of progress.

EDUCATION.

In view of the fact that the medical adviser of the family is almost invariably concerned in matters relating to the school it seems especially fitting that the vast influence of physiological age upon education be at least outlined.

Our educational plan fails to take any cognizance of the difference between the immature and the mature and of the vast development of the old abilities and the accession of new traits which occur during pubescence.

Nevertheless, the character of our educational endeavor is rapidly changing. That every child entering the kindergarten must proceed regularly through the elementary school, high school and college is no longer the accepted notion. Our practice is being directed towards life as well as toward culture, and it is not regarded as a calamity if a boy goes into business without a knowledge of Greek, it is being recognized that the world provides little room for the scholars, and much room for the mechanic, clerk and merchant and it is idle for education to endeavor to transform any growing generation of children into an adult generation of scholars.

Hitherto education has succeeded in casting out all of the children who fail to keep in line with the lockstep, and it has done its work fatally and well. Only those who could endure a system frankly fitted to subserve the ends of higher education, only those are thrown out who have failed in scholastic promise and accomplishment and these failures must perforce adopt other than higher activities to gain a livilihood.

Dropping out of the lockstep into life work is in one respect a most salutary thing for those unfitted for scholastic development, but our compulsory education law demands the

---

Note. It is stated that according to the census of 1900 of 1,102,471 males over 10 years old at work in New York City, 5% were in the professions, 38% in manufacturing and mecnanical pursuits, 36% in trade and transportation, 19% in domestic and personal service and 2% in agricultural pursuits.

child to be kept in school until he is a certain age, and has completed school work of a certain grade.

This keeps the deficient scholar in school long after he has reached maturity, and we find in the lower grammar grades (from 5a to 7a in New York City thousands of mature children who are, have been and always will be poor scholars, more out of sympathy with school work than ever before, resistant to all school authority, a turbulent, unduly, wasteful and useless burden, merely cumbering the scholastic ground till they become successful truants, or finally by hook or by crook succeed in getting their "working papers." Yet this class of boys are by no means inferior in other than scholastic lines.

The fundamental fact is wholly disregarded. A child when he matures commences to feel his newly acquired neror-muscular ability, his increased mental grasp, and his change of attitude towards life, and begins to consciously cast about to fit himself in the scheme of adult affairs, and to prepare his way for a livelihood and a competence. The instinct for life work, the earning instinct, awakens. Those who have been successful scholars will find themselves well advanced in school, and can with assurance of success look forward to a scholastic or professional life:—those who have had poor success as scholars will look with disdain upon scholastic life and turn to the world of affairs and strife, of mechanics, manufacturing or trade for their maintenance. *At this time it is essential to the mental and moral health of the boy to engage in something in which he can succeed.* And it is our business as physicians charged with the mental welfare as well as the physical welfare of our patients to see that the proper pursuit is provided.

Our present system often binds him down to a dull routine of school failure. We are breeding incompetents and rebels against society, whereas some appropriate treatment might breed valuable artisans and business men. The golden opportunity of nascent abilities is neglected and lost in hopeless formalism, and it will never recur.

RECOMMENDATION I.

In the light of the foregoing facts, permit me to recommend that children who mature in the lower grammar grades be given the opportunity to learn something in the elementary school which will directly prepare them for immediately taking a part in active life.

Trade education. office management, working with machines, typewriting and stenography, in short, industrial education should be introduced for the purpose of releasing these poor, mistreated children from the pedagogical lockstep and training them for an opportunity for useful citizenship. Our great body politic is not scholastic—to train for scholarship alone is undemocratic.

* * * * * * * * * *

While it is at this point the educational system on the inflexible basis of scholasticism and chronological age breaks down most woefully, it suffers from a lack of rational classification wherever mature and immature children are brought together in the same class room. Measured by the Procustean pedagogical system all children in the same class are relatively equal in scholarship, but our pedagogy takes no cognizance of other and immensely more valuable traits than those related to school succcess, which the mature possess in such a marked degree, and which the immature lack. In the upper grammar grades and in the high schools the mature are probably not on the average so very much better in mere scholarship than the immature, but they have a whole range of abilities related to success in life which if trained at this point would lead to personal and civic efficiency, neglected they become relatively useless or perverted.

RECOMMENDATION II.

Where mature and immature children are now brought together in the same class in the elementary or high school, they should be separated into different classes, so that the pedagogical, ethical and social treatment to which they are subjected may be better adapted to their disparate and distinct requirements and abilities.

It is agreed that a further division on the basis of success in scholarship would add to the efficiency of teaching since the present idea of the school function is that it is almost purely scholastic. With the growth of the ideal of practical utility as the function of school work and the gradual fitting of our curriculum to the dirvergent abilities of these two classes the need of this secondary classification will disappear.

CHILD LABOR.

The problem of child labor is clearly reduced to a formula by our fundamental thesis. It is proven that the mature are from thirty to fifty per cent. stronger than the immature, and that pubescence marks the beginning of the period of rapid increase in weight and strength regardless of the chronological age. On the merits of the case it is perfectly clear that the immature who are weak should not be allowed to work, and that the mature who are overwhelmingly more fit to work be allowed to engage in it. At present there is a division on the age basis which allows some immature to work and prevents some mature children from working, causing a hardship to many of both classes. This is wholly contrary to common sense, and the feeling of the community is justly against arbitrary method. This is being realized with becoming clearness as is evidenced by the last report of Commissioner Draper, of the New York State Education Department (Commissioner's Special Thesis; Annual Report 1903; Our Children, Our School and Our Industries) and by P. Tecumseh Sherman, in his report as Commissioner of Labor, (New York State, 1907). The latter states, "there should be added to our law a requirement of a fixed minimum standard of physical development as a condition to granting a certificate of fitness to work in a factory.

RECOMMENDATION III.

Child labor legislation should be based upon physiological age.

It is agreed that no child found physically defective or ill should be allowed to engage in any but the lightest tasks.

IN GENERAL.

Throughout the presentation of the foregoing evidence, it has been shown with increasing clearness that in all of our recording and investigation of children it is essential that physiological age be considered as a prime factor. Before and after the ages in which pubescence may be taken as a diagnostic sign there are without doubt other signs of physiological age which will have a significance which time and investigation will demonstrate, and it is probable that at *all ages* we must consider physiological age first and all other factors afterward. While the paramount importance of physiological age is apparent, it is not in any way recommended that we blind our eyes to other secondary bases of classification, such as chronological age, race, social strata, etc.

RECOMMENDATION IV.

All observations, records and investigations of children, and all treatment of children, whether it be pedagogical or medical, social or ethical must regard physiological age as a fundamental basis.

PATENT URACHUS IN A CHILD FOUR YEARS OLD, OPERATION AND RECOVERY.

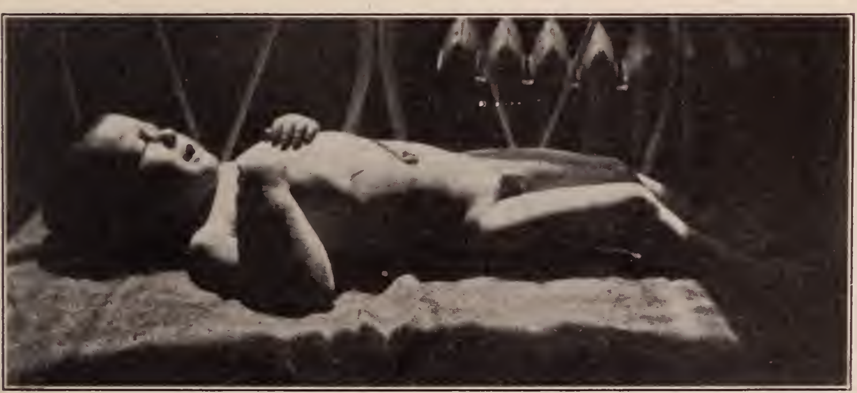
By John F. Erdmann, M. D., New York City.

I am indebted to Dr. H. I. Bock for this case. E. G., four years of age, of German parentage, was brought to me on March 25th with a history of leaking from the navel of what appeared to be urine, and that at times there was a distinct ejection of the stream from four to twelve inches in height from the umbilicus. No history in regard to the prompt repair or not of the umbilical cord was given. The patient was a healthy, robust, well nourished boy, with genitals perfectly normal, and an additional history of voiding a few drops of urine from the penis. Examination of the umbilicus showed a large mushroom-like eversion fully a half inch high, with a crater-like centre, the entire structure being thoroughly covered with epithelium. No erosions whatever, and a small cicatricial area at its centre, surrounding an opening which would just admit the end of an ordinary probe. The boy was kept under observation with a view of ascertaining what amount of urine would be passed per urethra. It was found that at times he would void a fairly good stream, thereby demonstrating good bladder tone and a perfect urethra.

An operation was performed on April 8th, a probe was passed into the opening at the umbilicus, it was found that immediately upon its entrance it could be made to pass from side to side like a pendulum, so that the point could cover a distance of fully a half inch between two points, demonstrating that we had to deal with a rather wide urachus than a narrow channel. A free incision was made from an inch above the pubes to the umbilicus. In attempting to dissect the urachus, etc., from the peritoneum several small punctures were made into the peritoneal cavity through the delicate membrane. The bladder was fusiform in shape, and the urachus, which was three-quarters of an inch in width and about three inches long, apparently was a continuation of the bladder itself. This evidently was due to distension of the bladder extending upwards into the urachus. This structure was found to consist clinically of the same type of tissue one would find in a true bladder wall. The umbilicus was excised, about one inch of the urachus with the umbilicus was cut off. Direct apposition sutures were then made, followed by a circular row below, with inversion of its sutured portion, after the same manner that one inverts the stump of an appendix, and a third row of sutures over the inverted end, all taken with catgut. The abdominal incision was then closed, a catheter having been previously introduced into the bladder, fixed permanently by suture to the remains of his prepuce. This was kept in for three days. Subsequent to its removal the boy urinated without difficulty, as any ordinary child should. He was discharged from the hospital in seventeen days, having been up and about the ward for a week preceding.

The accompanying photograph shows a probe introduced into the orifice of the umbilicus and also the peculiar mushroom-like umbilicus.

60 W. 52nd, N. Y. C.



THE DIAGNOSTIC VALUE OF SYMPTOMS OF THE UPPER AIR TRACT IN RHEUMATISM, GOUT AND DIABETES.*

By Emil Mayer, M. D., New York.

ADJUNCT ATTENDING LARYNGOLOGIST, MT. SINAI HOSPITAL; CHIEF OF CLINIC EAR AND THROAT DEPARTMENT, MT. SINAI HOSPITAL DISPENSARY; CORRESPONDING FELLOW BERLIN LARYNGOLOGICAL SOCIETY; FELLOW AMERICAN LARYNGOLOGICAL ASSOCIATION, ETC.

The first and most important relation of the upper air tract in rheumatism, is the etiological factor. It is now generally accepted that rheumatism is a disease of the infectious type and that some form of streptococcus is responsible, and there is practical unanimity also that entrance into the system is obtained by way of the mouth through some part of the Waldeyer ring.

The manner of entry is graphically described. The bacteria of health find themselves strongly entrenched in the tonsillar tissue of the ring, faucial, pharyngeal or lingual. The mouth is the "club house" for all sorts of diseased germs, streptococci seeking admission. Here is the forkway of food and air, and here too are the crypts in the tonsillar tissue where the enemy may become lodged. The health germs fight valiantly to throw off the septic ones, and succeed usually, unless reinforcements arrive for the enemy and somewhere a denuding of the epithelium takes place, when a portal of entry is found, the lymph spaces are entered, then the glands, and infection ensues.

---

*Being a part of a symposium on this subject presented before the New York Academy of Medicine, April 2nd, 1908.

Regarding the precise point of infection there is a difference of opinion, and as the possible prevention of infectious diseases is at issue, it is of the utmost importance that these differences should be here considered by the clinician who sees the acute rheumatism and the acute endocarditis, and the laryngologist who may see the starting point of the infection.

The pharyngeal tonsil has been most thoroughly and exhaustively studied both from a pathological as well as from the clinician's standpoint. Of our own pathologists, Jonathan Wright (1), J. L. Goodale (2), and Geo. B. Wood (3) have contributed freely. While among the clinicians there are among our own authors, H. A. Hare (4), C. G. Kerley (5), P. Marvel (6), Isaac Adler (7), K. K. Wheelock (8), A. Jacobi (9), with a host of others the world over.

Of the recent writers there is an interesting resume by F. Kleiminger (10), on the significance of the tonsils for the occurrence of the so-called cryptogenetic diseases.

General affections occurred independent of tonsils in 7% of cases. In 83% the tonsils caused the general infection.

A. There was a tonsillar inflammation.

In 35% of cases of rheumatism and gout,
In 42% of cases of nephritis,
In 45% of cases of other affections,
That is in 41% of all streptococcus infection.

Of these the tonsils were in 50% subnormal in size, in 43% hypertrophied, and in 7% otherwise abnormal.

B. Previously existing tonsillar infection with inflammation was found in 22% of cases of polyarthritis, in 25% of nephritis and in 33% of other affections. That is 27% of known streptococcus infections.

Of these tonsils showing a previous diseased condition, 43% were subnormal, 45% were hypertrophied, and 13% otherwise abnormal.

C. Tonsils not previously infected though the infection entered by the mouth: In 35% of rheumatic joints; in 33% of nephritis, and in 22% of other conditions. Of these the tonsils were subnormal in 75%, in 8% hypertrophied, while 17 were normal in size.

We must therefore be guarded in our prognosis in the anginas with small tonsils. Inquiry should be made as to previous tonsillar inflammation and if this exists the prognosis should be guarded. Tonsillotomy should be performed in cases of threatened dyspnoea or when malignant growths occur. Its performance removes an important protector against bacterial invasion.

Chas. S. Kiefer (11) on the relation between tonsillitis and acute articular rheumatism with particular reference to the prophylaxis of post-anginal rheumatism, says: "We must differentiate between the cases in which the tonsils are the portals of infection in whom rheumatism occurred after an incubation period, and those in which, as is occasionally noticed, the tonsillar disease is a complication of rheumatic arthritis."

In 276 cases of rheumatism, 2.3% had a previous tonsillitis, the period of incubation averaged 29 days; treatment consisted in full doses of saturated sol. of Bicarb. of soda and local applications of dry aspirin. The immedate results were very satisfactory, redness and swelling disappeared rapidly and after 20 hours the patient was well. In two series 60 patients were treated by this method and as many others with guaiac, tinct. iron, peroxide hydrogen. In the latter series the duration of the disease was 6 days, a number had swollen necks and severe general disturbance. Superficial and deep ulcerations of the tonsils were frequent and in 15% rheumatism of the joints ensued. In the series treated with aspirin, the average duration was three days. The spread of the affection was much less, there was no general disturbance and no ulceration of tonsils and in no case was the joint affected.

R. C. Brown (12), (The relation of the tonsil to infection and infectious diseases), has a most interesting study on this subject. He says:

"Rheumatism is so frequently preceded by tonsillitis that it seems to be a question if there is a specific germ for rheumatism. The soluble poisons or toxines of several different bacteria may, on account of faulty elimination be deposited in the joint membranes and cause the arthritis. It is very probable that the tonsil is more bactericidal in its defensive action than it is antitoxic. This would account for the large number of cases of infection which are due to the faulty elimination of soluble poisons.

"The tonsil is anatomically admirably arranged to resist infection; it is continually exposed to the action of pathogenic germs.

"When we have an inflammation of the tonsil it is caused by a pathogenic germ which is endeavoring to enter, and the inflammation itself is essentially a defensive reaction. When the resistance is lowered from any cause or the germs are virulent enough to overcome the other means of defence which the tonsil has in common with the rest of the oral mucous membrane, or if the tonsil is wounded a positive chemotaxis having been produced, there is a lacunar tonsillitis. When a negative chemotaxis is produced either on account of the virulence of the infection or from some other unknown cause, there is a general systemic infection without a tonsillitis. When we do have a systemic infection it is either in spite of the defensive reaction or on account of negative chemotaxis. Finally, the relation of the tonsil to infection and infectious disease is one of protection, and the disease we call lacunar tonsillitis is an example of phagocytosis and is a defensive reaction."

Joseph L. Goodale (Some considerations relative to systemic infection through the tonsillar ring) says, "Our knowledge of the pathology of the faucial tonsils would render it probable on theoretical ground, that these structures constitute the most frequent portal of entry of all the pharyngeal tissues. This hypothesis has been confirmed by the post-operative results of a certain percentage of cases." In the history of a case presented by the writer there seems a reasonable ground for assuming that after extirpation of the tonsils, infection of the joints occurred through the lymphoid structures of the posterior pharyngeal wall. It is a familiar experience to us all to encounter cases of acute pharyngitis characterized by reddening and swelling of the pharyngeal follicles without inflammatory manifestations in the faucial tonsil. There may be a small white spot at the summit of its convexity and this would seem to be similar to the phenomena occurring in acute lacunar tonsillitis.

In the latter there is a development of pathogenic bacteria in the crypts of the tonsils with formation of toxine which is absorbed into the tonsillar tissues. Through the chemotactic properties of the toxine emigration of leucocytes occurs from the blood vessels of the vicinity into the crypts. These leucocytes together with desquamated epithelial cells, constitute the white spots seen in simple, acute, and proliferative tonsillitis. Where the bacterial toxine is stronger coagulation of the albumen in the superficial tissue of the crypts occurs with formation of fibrin as a result of which the area of white about the lacunae is widened.

In those individuals whose tonsils have been extirpated, an acute follicular pharyngitis occurs as frequently as before. It would seem to be due to a predisposition for such infection on the part of the individual. While experience has shown that the faucial tonsils are the most vulnerable point of entrance for micro-organisms and while certain previous alterations in these structures favor such infections, yet we are nevertheless impelled to believe that normal lymphoid tissue presents no barrier. Such a belief brings us very directly to a consideration of the part played by the host itself in relation to the pathogenic micro-organisms. Even if on examination the tonsils, as well as lymphoid tissue, appear to be normal, we are not thereby able to say that they have not been in the past points of entrance for micro-organisms. The history of the case would be of assistance.

If it is possible to test the opsonic index of the individual with reference to the micro-organisms suspected of etiological relation which have been recovered from the throat confirmatory evidence would thereby be obtained."

With evidence such as this, and a very small part of a most extensive literature we rest the affirmative evidence. On the negative side E. Fletcher Ingals (13), on the relation of tonsillitis to rheumatism, says, after an analysis of his own cases, that 45% of his cases of tonsillitis have a rheumatic history but 16% of other affections of the throat and chest also have a rheumatic history so that not more than 29% of the cases of acute tonsillitis can be fairly attributed in any way to the rheumatic poison and more than half of these are doubtful.

Only 19% of his patients gave a history of previous articular rheumatism, and 18% a history of muscular pains ascribed to rheumatism, 8 per cent. of the cases of acute tonsillitis were attended by or immediately followed by articular rheumatism, the same number claimed to have had muscular rheumatism, and in 5 per cent. the rheumatic attack immediately preceded the angina.

There is not as yet sufficient evidence to prove that the tonsil is only or even the chief portal of entrance for the rheumatic poison. Considering, however, that in all probability acute articular rheumatism represents a mild type of septic hematogenic infection of the joints, there is no reason why the tonsil with its notorious facility for infection with pyogenic germs should not, possibly even frequently assume the role of an infected wound leading to septic consequences of a systemic nature. These vary in degree and location and rheumatism is perhaps one of the phenomena. The evidence does not justify the belief that inflammation of the tonsil may prevent or take the place of an attack of rheumatism. The statement that the acute beginning of muscular rheumatism is nearly always preceded by tonsillitis is not supported by the history of his cases, in only 2% of which did muscular rheumatism follow tonsillitis; however, in 6% muscular pains that were called rheumatism attended the tonsillitis, though they may have been due to the fever attending tonsillar inflammation.

A. Jacobi (9), in his presidential address at the 18th annual meeting of the American Pediatric Society, takes up the subject of the tonsil as a portal of microbic and toxic invasion. "In diphtheria whenever the membrane is limited to the tonsil, there is very little or no glandular swelling in the neighborhood. On the other hand, if a membrane extends from the tonsil to its neighborhood, or starts at a distance from the tonsil neighboring lymph bodies swell at once. Again, the treatment of this neighborhood shows its effect almost immediately on the swelled glands. That is mostly evident when the seat of the membrane is anywhere in the posterior nares which excel by an immense network of lymphatics. On the other hand when it covers the vocal cords and Morgagni's fossa, both of which have only a scanty network of lymphatics, there is no adenitis nor any constitutional symptoms. In the so-called pseudo-membranous croup there is no glandular swelling or fever." The anatomy of the tonsil is then presented. "A surface lesion must always be supposed to exist when a living germ or toxin is to find access. If that were not so, no human or inferior animal could exist under the clouds of microbes, and toxins surrounding us. There is only one exception. Stoehr has shown small gaps between the normal epithelia of the surface of the tonsil. It looks rational therefore to admit that when there is merely a surface lesion though ever so slight, there may be an invasion into the tonsil. When, however, the vessels are exposed to pressure by newly formed cells or tissue, there is no invasion, certainly not beyond the tonsil itself, no ganglionic swelling, no toxic poisoning. It is even rational to believe that now and then, when tonsils, or what is more common, a single follicle becomes inflamed, the very venous obstruction will exert the bacterial influence of the stagnating blood serum." He then quotes freely from Geo. B. Wood's essay on the lymphatic drainage of the faucial tonsils (3) and states that "he (Wood) takes things too easy. What he sets out to prove he simply postulates. He takes the theory of tonsillar invasion for granted, wisely concludes there must be a sufficient number and calibre of afferent and efferent vessels, and courageously postulates as an anatomical fact what he proposes as a theory.

"A number of facts should be considered in connection with the structure and the absorbing and transmitting power of the tonsil. Its surface epithelium is, according to Stoehr, not uniform, and may admit foreign material without a lesion, thus an invasion into the normal tonsil is possible."

"A catarrh with destruction of epithelium may add to that possibility. The lymph current near the tonsil is less active than that of the pharynx at some distance. There are, moreover (Labbe), no lymphatic sinuses around the tonsil. There is a system of closed canals in the follicles which do not open into the connective reticulum. This observation of Reterer is confirmed by Hodenpyl. The external deep surface of the tonsil is covered by a firm fibrous capsule. Still, according to many, there is a lymph communication between the tonsil and at least one gland situated near and below the crossing of the sterno-cleido-mastoid and digastric muscles. Exposure and many diseases change the surface and the structure of the tonsil. Every new inflammation changes them. New cell infiltration and cicatricial tissue render absorption less possible. Blood and lymph vessels are compressed and undergo atrophy. That is why in advanced life the tonsil gets harder and smaller, and infections become less. No tonsil remains long in its original condition; and the same deleterious influences will no longer prove effective.

Laboratory injections into the normal tonsillar structure are made under pressure, and prove nothing, or very little, for the unembarrassed organ when in situ, and surely not under pathological conditions. Thus, while the normal infantile tonsil which has not suffered from previous exposure or disease may, or must be believed to permit some invasion into the tonsillar structure, and sometimes even beyond it, microbic invasion through the tonsil is not predominant over that which takes place through the lymph apparatus of the pharynx.

That agrees perfectly with the clinical observation of local toxic affections of the oral cavity, according to which membranous affections limited to the tonsil cause no, or little, adenitis or constitutional symptoms."

Thus, here in brief are some of the opposing views.

It seems but fair to present the reply of Wood (14), who says in a recent letter that "I have not in the least changed my views concerning the importance of the tonsils, not only in local infection, but also in a great many cryptogenic and general infectious processes. The question of tonsillar origin of rheumatism, for instance, is being recognized more and more every day; certain cases which have resisted all other treatment get well after the removal of the tonsils. Personally, I believe that the faucial tonsil is much more important in the etiology of infections than the other tonsillar tissues because the crypts of the tonsil are so constructed as to favor the retention of organisms and decaying epithelial cells. To say that the tonsillar manifestations result from an already existing infection makes a very hard knot to be untangled. How does the infection get to the tonsil, and why should it pick out this structure for the localization of pathological processes? If it is of lymphatic origin then the infection must travel against the current and the glands of the neck must possess a very mysterious sort of latent power, as they show pathological changes subsequent to the tonsillar symptoms. Examples of such would be acute tonsillitis and tuberculosis."

In the recent discussion on this subject of which Goodale's essay, already quoted, was the opening, the consensus of opinion among laryngologists was that the infection did enter largely at least by way of the tonsils. This divergence of opinion existing among serious and earnest workers of the profession should find some means of settlement and as a rejoinder, we may present a brief resume of two recent papers.

S. J. Ross (15), The Role Played by the Tonsil in Organismal Disease, says that it has often appeared to him that general practitioners are often apt to overlook the important part played by the tonsils as the points of entrance of organisms in specific diseases. He cites the case of a woman aged 40 with tonsillitis. Cultures showed streptococci and staphylococci, the former largely predominating; four days afterwards, when the tonsillar symptoms subsided and she had a rigor, a large spleen and a typical endocarditis ensued.

E. A. Tracy (16) reports two cases of acute inflammation of tendon sheaths sequential to acute tonsillitis. Finally from a recent editorial in the Therapeutic Gazette (July 15th, 1907) Hobart A. Hare, editor. I quote in part:

"Recent investigations combined with clinical studies have proved again and again that the tonsils in the majority of instances act as an efficient barrier against the entrance of infecting micro-organisms into the general system and the swelling of these glandular tissues after exposure to certain infections is undoubtedly the result of a battle royal between the resistance of the individual and the parasites which are attacking him.

To remove tonsils which are to a large extent healthy would it seems to us, remove one of the barriers introduced by nature in the pathway of infection, but chronic cheesy tonsils should always be regarded as areas from which invading micro-organisms may descend upon the general system of the patient. It follows, however, even if the patient suffers no discomfort in his tonsils, these tissues should be carefully treated and they may be removed, particularly if they are the only infecting source which can be discovered."

Rheumatism once established, may show itself in the nose, pharynx, and larynx, and distinct rheumatic affection of the crico-arytenoid articulation has been shown to exist.

Laryngologists have frequently made the diagnosis of a rheumatic affection of the upper air passages, then only eliciting a history of rheumatism and with appropriate treatment cured the patient.

That affections of the upper air passages may cause symptoms of articular rheumatism, has been shown by K. K. Wheelock, who reports an abscess of the antrum causing symptoms of acute articular rheumatism.

Almost all that has been said regarding rheumatism applies to the condition known as gout, except that in the latter there is frequently a concurrent condition in the nose of a vasomotor type. Many of the nasal symptoms subside when treated in the same manner as gout, and these have been variously labeled as due to the lithaemic or gouty diatheses.

Of the relation of the upper air passages to diabetes, a very interesting chapter was presented by the pupils of Leichtenstern (17) of Cologne after his demise, from his observations on this subject, entitled "Laryngeal Disease in the Course of Diabetes," (Laryngitis Diabetica). He notes the difficulties in the way of a diagnosis of this affection by saying that a glance at the host of secondary diseases of the larynx teaches that the laryngologist to be master in his field of work, which, though limited to a narrow field in one sense, yet from a pathological point of view and especially from an etiological standpoint, covers an immense field, must have a knowledge of many differing acute and chronic disorders, above all affections of the lungs, but also of many infectious diseases. He must have a comprehension of neurology, syphilology and dermatology. In a word must be a thorough physician.

He was led to this statement for the reason that the cases seen by himself had been passed over without a correct diagnosis, which he cannot consider however as a reflection on those who had previously seen the patients. He cites four cases, all practically alike, one of which, in brief, may be quoted.

A singer, female of tall stately figure, not over stout, complained that her voice was gradually failing. At first she noticed it only in responding to encores, but of late it affected her so that she felt herself unable to continue her vocation. Her sensation was that of dryness, though she never had any inordinate sense of thirst nor was there any emaciation. Except that her cords looked dry and shining as though varnished, there was no abnormality to be seen. The urine showed a specific gravity of 1036 and sugar was found amounting to 70.4 g. in 24 hours.

With rigid diet, the sugar disappeared and there was a complete return of vocal power.

The condition is spoken of as Xerosis and occurs in but a small percentage of diabetics and is an early symptom of the condition the discovery of which thus early being of great advantage to the patient. Diabetic furunculosis of the larynx occurs among the later manifestations, but is also rare, the writer having seen it twice in 412 cases of diabetes. He never saw a perichonditis to follow this condition though it may occur. While diabetics are prone to furunculosis due to the entrance of pyogenic staphylococci, the laryngeal mucous membrane withstands these and it requires a special vulnerability to permit their entrance. Any acute laryngitis may, however, prove a fertile spot for their entrance, and hence diabetics should avoid a laryngitis.

Phlegmonous circumscribed laryngitis comes suddenly, there is a sharply circumscribed inflammatory process followed by serous exudate; the oedema is followed by abscess in a few days.

Freudenthal (18), (Diabetic Ulcerations of the Throat), reports five cases of this affection, two of whom died. The third case with ulcer on the epiglottis and inter-arytenoid space occurring in an elderly man recovered from his throat symptoms by patient daily treatment of orthoform. In the fourth case an ulcer of the tonsil existed and analysis revealed the presence of diabetes, while in the fifth case the ulcer was on the left arytenoid cartilage.

From this presentation we may conclude: That infection in rheumatism and gout enters the system by way of the mouth, the opinion of the majority being that the chief point of entrance is the tonsil.

That rheumatism may affect as such the nose, pharynx and larynx.

That gout affects the larynx but most frequently the nasal mucosa. That diabetes may be discovered very early by painstaking examinations in certain laryngeal cases, a late symptom bring furunculosis of the larynx and possible perichonditis and that fatal ulcerations in the throat occasionally manifest themselves in diabetes.

REFERENCES.

1. Jonathan Wright, N. Y. Medical Journal, December 15th, 1906.

2. J. L. Goodale, Trans. Am. Laryngological Asso., 1907, p. 228.

3. Geo. B. Wood, American Journal Med. Sciences, N. S. 131, p. 620.

4. H. A. Hare, Editorial, Therapeutic Gazette, February 15th, 1907.

5. C. G. Kerley, N. Y. Medical Journal, 1907, Vol. 86, p. 333.

6. P. Marvel. Journal Med. Soc. New Jersey, 1906-7, Vol. III, p. 143.

7. Isaac Adler, N. Y. Medical Journal, 1906, Vol. 83, p. 647

8. K. K. Wheelock, American Medicine, Phila., 1906, Vol. XI, p. 250.

9. A. Jacobi, Archiv. Pediatrics, July, 1906.

10. F. Kleiminger, Centralblatt f. Bacteriologie, Vol. XXXVIII, p. 690.

11. Chas. S. Kiefer, American Medicine, September, 1906.

12. R. C. Brown, New York Medical Record, 1907, Vol. 71, p. 341.

13. E. Fletcher Ingals, Laryngoscope, 1907, Vol. XVII, p. 712.

14. Geo. B. Wood, Personal Communication.

15. S. J. Ross, Medical Press and Circular, 1906, N. S. 81, p. 333.

16. E. A. Tracy, Boston Medical and Surgical Jour., 1907, Vol. 157, p. 114.

17. Leichtenstern, Münch. Med. Wchnsch., 1900, No. 16, p. 535.

18. W. Freudenthal, Annal of Otology, 1899, p. 293.

25 East 77th St.

BREAST AND ARTIFICIAL FEEDING OF INFANTS.*

By Henry Enos Tuley, M. D.,

PROFESSOR OF OBSTETRICS, UNIVERSITY OF LOUISVILLE, MEDICAL DEPARTMENT.

No substitute has ever been found for normal mother's milk for the nourishment of the infant. The infant should be put to the breast as soon as the mother has had a rest from her labor, as the colostrum, present in the breast before labor, is essential for its purgative effect on the child. After the breasts have been emptied of this first secretion, the child should not be put to the breast oftener than every four to six hours, until the advent of the milk which usually occurs the evening of the second or the morning of the third day. If nursed every two hours during the first three days the tugging and pulling on a flabby empty breast, results in an erosion or fissured nipple.

A cracked nipple is a most painful and distressing condition, as well as a dangerous one from the possibility of an infection of the breast occurring through this open wound. A fissured or eroded nipple should not be nursed from directly, but protected by a nipple shield. The glass shield with rubber nipple and guard is the most serviceable. Immediately after each nursing the nipple should be painted with a solution of nitrate of silver, 20 grains to the ounce of water, care being taken to limit the application directly to the affected part. This forms a pellicle from the coagulated albumen of the serum, and allows granulation to occur beneath it. The nipple is then covered with a piece of sterile gauze or soft linen.

---

*Read before the State meeting of the Louisville Academy of Medicine, April 20th, 1908. Published simultaneously in "The Louisville Monthly Journal of Medicine and Surgery."

After the milk comes, the nursing should be by schedule, every two hours during the day and every three hours at night: from 6 a. m. to 10 p. m. every two hours, and one or two nursings at night. Under no conditions should a baby be allowed to sleep with its mother; the danger of over laying is great, as is the danger of the child nursing most of the night. This always results seriously to the child's digestion.

Schedule for nursing a breast-fed baby.

Age.	Interval, day.	Number night nursings.	number of nursings, 24 hours.
First three days,	4 to 6	1	4
Until end of first month,	2	2	10
Second and third months,	2½	1	8
Fourth and fifth months,	3	1	7
Sixth to twelfth months,	3	0	6

The child should nurse from one breast at each nursing, alternately, and should be satisfied in from ten to fifteen minutes. If it must be nursed from both breasts each time and is unsatisfied when the nursing is finished the quantity is inadequate for its needs. By regularity being established early both the baby is trained to good habits, and the breasts to secrete at regular intervals.

The nipples should be washed before and after nursing, with a solution of boracic acid and the child's mouth thoroughly cleansed before and after the nursing, with the same solution.

It must be a rule to give water to a nursing baby between feedings. Before the milk comes in order to prevent a too rapid loss of weight, there should be given at regular intervals a weak solution of sugar of milk, one per cent., or even plain sterile water.

There are but few *contraindications* to maternal nursing. A severely inverted nipple makes it impossible for the child to nurse. Nursing should not be allowed in mothers suffering from tuberculosis in any form; malignant disease; diphtheria; rheumatism or chorea; erysipelas; typhoid fever, as the typhoid bacillus is excited in the breast milk; the acute exanthemata; pregnancy occurring during lactation; epilepsy or nephritis, or if she has suffered from puerperal hemorrhage, nephritis, eclampsia or infection.

A nursing mother should lead a perfectly normal, healthy life. Her diet should be generous and varied. There are practically no articles of diet which if they agree with the mother will cause the milk to disagree with the child.

During the first three days of the puerperium the diet should be light and easily digested. The following sample diet list for the first few days will generally yield good results:

First day. (after labor) Breakfast—Cup of team, or cocoa, piece of dry or buttered toast. Lunch—Beef, chicken or mutton broth, toast or wafer. Supper—Glass of milk, or cup of tea.

Second Day.—Breakfast—Cereal and cream, with cocoa or tea. Lunch—Soft boiled egg, rice and cream. Supper—Milk toast, tea or milk.

Third Day.—Breakfast—Soft boiled egg, cereal, coffee or milk. Lunch—Baked potato, gelatin jelly and cream, and milk. Supper—Baked apple and cream or milk toast.

Fourth day.—(after bowels have moved)—Breakfast—Cereal, poached egg on toast, breakfast bacon, and cocoa or milk. Lunch—Squab or bird, potato chips or baked potato, cocoa. Supper—Mush and milk.

Fifth Day.—Breakfast—Cereal, broiled steak, hashed brown or baked potato, milk. Lunch—Chicken, broiled or baked, mashed potatoes, sweet potatoes, asparagus tip salad. Supper—Milk toast.

Sixth Day.—Breakfast—Lamb chop, soft or poached egg, toast, cocoa and milk. Lunch—Junket, cocoa, spinach, potato. Supper—Baked apple or prunes, toast and milk.

Bran muffins made of bran and flour, equal parts, are especially useful during this period as a prevention of constipation.

Strict attention should be paid to her bowels, and at least one evacuation had daily. It must be remembered, however, that there are a few purgatives which are excreted through the milk. I have frequently noticed a purgative effect on the child when the mother has been taking cascara in some form. She must have at least a half hour's exercise in the open air daily and longer if possible.

If the child is satisfied after nursing and during the interval, is gaining in weight regularly; is happy and bright; it may be asserted the milk is both up to the standard in quantity and quality. If the child is satisfied but a short while after nursing, soon showing signs of hunger and the supply apparently adequate, then it is deficient in quality. If a milk is normal in amount, but deficient in certain ingredients, it can often be corrected and made to agree with the child.

Primipara should be instructed in the proper method of putting the child to the breast, and holding it while nursing. During the puerperium the mother lying partly on her side, the baby is put to the breast so it can readily grasp the nipple, which has been previously prepared, and one finger depresses the gland so that it will not press upon the nose and interfere with its breathing. The baby can either be supported upon the arm or lie flat upon the bed, the mother's arm being raised.

Holding the breast so as not to obstruct the child's breathing is most important. I have seen one normal baby when 12 hours old entirely asphyxiated from being allowed to bury its nose in the breast.

When able to sit up to nurse the mother occupies a low chair with a footstool, upon which rests the foot of the side from which the baby nurses. The baby is held upon the arm, and leaning forward slightly the nipple is placed squarely in its mouth and not obliquely.

shown by Kerley and others to be faintly acid when tested with phenolphthalein. By others it is claimed breast milk is amphoteric, that is, it is alkaline to red litmus and acid to blue litmus.

The following table is given by Holt showing the composition of breast milk.

	Average per cent.	Common health variations per cent.		
Fat	4.00	3.00	to	5.00
Sugar	7.00	6.00	to	7.00
Proteids	1.50	1.00	to	2.25
Salts	0.20	0.18	to	0.25
Water	87.30	89.82	to	85.50
	100.00	100.00		100.00

Milk must be thought of as a homogeneous mixture, its chief ingredients being fat, sugar, and proteids, and the percentages of these must be definite and stable if the milk will agree with the child. The usually accepted analysis of mother's milk shows, fat 3.5%, sugar 6%, proteids 1.5%.

An examination of breast milk by means of the Holt clinical milk set, will show a more or less wide variation in the proteid and fat content in the same individual at different times of the day. There is always wider variation in these constituents than in the sugar which is more or less constant. As already stated, the quantity of the milk may be sufficient for child's needs, but the quality much below. The quantity obtained at a feeding can be determined by weighing the child before and after nursing, as was done in a number of cases by the writer which were reported in the Archives of Pediatrics (May, 1893).

Each baby was weighed with all of its clothes on before and directly after each nursing, with the nurse's and mother's assistance being sure that the baby was kept awake during the entire 20 minutes it was allowed to nurse. The weighing was carefully done upon one of Fairbanks' scales which registered in half ounces with no change being made in clothing between weighings. Elimination of error was by this means made possible which might occur from loss in weight by excrement from the child or from a difference in the texture of napkins applied. Eight babies were weighed, 64 weighings being recorded. The babies were from two to ten days of age, healthy and all weighing 6 pounds or more at birth.

Age.	Number of weighings.	Aver. weight of ingested milk.
2 days.	2 weighings	1.25 ounces.
3 "	13 "	1.3 "
4 "	3 "	1.0 "
5 "	10 "	1.5 "
6 "	6 "	1.25 "
7 "	13 "	2.27 "
8 "	6 "	2.25 "
9 "	8 "	2.5 "
10 "	3 "	2.5 "

Given a case in which there was but little gain after a week's nursing or in which there is continued colic or curds passed in large quantities, the breast milk should be examined clinically or if it is possible, chemically. Holt's milk set for the clinical examination of breast milk if very satisfactory. The child should be put to the breast and allowed to nurse for three minutes and a half ounce of milk either pressed or pumped from the breast and if enough can not be obtained from one side, the other is treated in the same way.

The problems to be met in the supervision of breast feeding are: 1. The increase of a too small supply. 2. Changing the character of the milk, (a) decreasing the proteids, (b) increasing the fat, (c) decreasing the fat. 3. To make serviceable nipples out of flat and depressed ones. 4. To supply an artificial or adjuvant food in case of a good but too small supply from the breast. 5. To continue nursing should there be a suppurating mastitis and retain the integrity of the gland after a subsidence of the inflammation.

While, as a general rule, it may be stated the ideal food is a healthy breast milk, this is not always the case for not infrequently a mother has an abundant supply but secretes a milk which is unsuited to the needs of her own baby. These cases, however, are the exception, and it is infrequent that we find an unsuitable breast milk which cannot be changed by suitable remedial measure, hence I cannot refrain from saying a word against the unnatural mother who refuses to nurse her infant from purely selfish reasons, that she may have more time for society or pleasure No physician should be a party to this or encourage it in any way, unless it can be plainly shown by most careful examination that the milk is unsuited and beyond remedial measures.

While it may be a fact in the larger centers of population that mothers are unfeeling and unnatural enough to allow social obligations to interfere with nursing their babies, we believe that in the South and West this is seldom seen. There are undoubtedly, cases where weaning must be decided upon in which the child does not gain, or there is continual disagreement of the milk in spite of efforts to change the constituents. I have seen a number of cases in which the necessity for weaning has arisen early from unsurmountable reasons. These have been enough to impress on me the wisdom of voluntarily surrendering a good breast milk supply for the uncertainties of artificial feeding.

The following analyses are given of colostrum:

	Winslow.	Pfeiffer.
Fat	4.00	2.04
Sugar	1.5	3.74
Proteids	14.8	5.71
Salts	1.00	0.25
Water	78.7	88.23
	100.00	100.00

Colostrum is more yellow in color than milk, does not coagulate readily except on boiling and contains in addition to the small regular size fat globules, the large granular colostrum corpuscles. These may persist in the milk until after the second week, but usually are not present after the tenth day. They recur during lactation, during menstruation and under the stress of great mental excitement, fear, anger, sorrow, sexual excitement, etc. When present abnormally similar symptoms appear to those which occur soon after birth, diarrhea, and frequently vomiting. Compared with milk, colostrum has a higher percentage of proteids and less sugar and fat.

Besides this change which occurs, the milk may be influenced by any temporary illness of the mother, as influenza or grippe; or any serious or prolonged illness, as typhoid fever, which would interrupt the nursing entirely.

Certain drugs are said to be excreted in breast milk; as opium, belladonna, cascara, mercury, iodides, bromides and salicylates. The elimination of drugs in the milk is not sufficiently certain or exact to employ this method of medication in infants.

The following case illustrates colostrum disagreement:

A mother began to menstruate four weeks after her delivery. Immediately her baby, which was doing well previously, began vomiting and purging. The second month the menstruation recurred with similar symptoms in the baby. I was called to see the child at this time and an examination of the breast milk showed it to be heavily loaded with colostrum corpuscles. The child was ill for several days, was weaned, and for one year was a constant care and anxiety, because of the difficulty of finding suitable food or milk modification for it.

There may be ample supply of good milk, but the absence of a serviceable nipple may prevent the child's obtaining it. This may be often seen, and it should be a routine practice to make as early an examination of the breasts and nipples of a pregnant woman as possible, especially in primipara, in order to give instructions in the massage of flat and depressed nipples. By massage and training a very serviceable nipple can be made from an unpromising one if the treatment is begun early enough. The wearing of tight corsets or clothing should be advised against during pregnancy, but especially in the presence of flat or depressed nipples. A careful inquiry should also be made of multipara in regard to their lactation history, as having a bearing on the possibility of nursing the new baby.

A stationary weight, or a loss after the second week; vomiting, not simply a slight regurgitation; colic; continuous crying; diarrhea, with green movements containing curds and mucus, should be an indication for a close investigation of the breast milk, the frequency and time of nursing and the daily routine of the baby's life.

A high percentage of proteids is evidenced by colic, crying with a doubling up of the legs, tense abdomen, green stools containing mucus and curds. This very often occurs during the puerperium, but as soon as the mother gets up and is able to take the proper exercise, the increased proportion of proteids is generally decreased. Should this relatively high percentage of proteids with low percentage of fat persist, and the plentiful supply keep up, much help can be had from pumping or milking out the fore milk from the breast, the child being allowed to nurse only the middle milk and strippings. Taking the child from the breast before it has finished nursing and giving it a small quantity of barley water, previously dextrinized, from a bottle, will often relieve the colic, lessen the diarrhea and make the curds smaller.

Too much fat, which I have met but a few times, causes vomiting and diarrhea, with few or no curds in the movements. If too much fat is present there may be found in the stools small round masses which resemble curds very much, but are smooth and soft and not so white as curds.

A too small milk supply calls for active treatment. It is evidenced by a stationary weight or a loss in the weight of the infant; crying within a few minutes after leaving the breast and sucking vigorously on its fists after nursing. If the deficiency in supply is the only fault, it may frequently be increased by such galactogogues as nutrolactis or somatose, free drinking of milk, cocoa or chocolate and the cereal gruels.

These gruels may be made of oatmeal, barley or cornmeal. After thorough cooking for several hours, they are ready to serve, enough milk being added so they can be drank from a cup, or eaten with a spoon. No article of diet so stimulates the function of the gland as milk, and in connection with the cereals excellent results are seen. Alcoholic beverages are to be avoided, as they encourage the secretion of a milk with a deficiency in its life giving properties and an increase in the watery element.

If these measures do not correct the difficulty, the child should be put on a modified cow's milk or suitable formula, in addition to the nursing, giving at first one or two drachms to an infant of four weeks immediately after a breast feeding, gradually increasing the amount as indicated. This will generally suffice to obtain a satisfactory gain in its weight.

With a good milk supply, regularity of nursing, infrequent or no night nursing, a child will generally do well; a good supply with a disregard of these requisites will result, perhaps, in serious digestive derangements. Should a combined breast and artificial feeding be necessary, the one or two night feedings should be breast milk if for no other reason than the convenience to the parents. The only objection to this is the possibility of the mother falling asleep and allowing the child to lie with the nipple in its mouth for several hours at a time.

To increase the quantity of the milk, give more nutritious diet, more milk and cereal gruels.

To increase fat; give milk and meat.

To decrease fat; give less meat and milk and increase the water.

To increase the proteids; give more meat and eggs; lessen exercise.

To decrease proteids; increase exercise to point of fatigue and decrease meat.

Because of the universal supply of cow's milk and fact that it cootains the same general constituents of, and can be modified to nearly resemble mother's milk, it is the best substitute for the normal mother's milk, when artificial feeding is necessary. A comparative analysis of mother's and cow's milk is here given.

	Mother's Milk	Cow's Milk.
Fat	3.5	4.0
Sugar	6.0	4.0
Proteids	1.5	3.5 to 4.0

No food product is so capable of contamination as milk, or as little average intelligence used in its production and care. How common is the saying especially in cities, when the diet of a sick child is under discussion. "Take it to the country where you know good milk can be obtained." where you know good milk can be obtained." It is a fact that but few people in the country, unless in the scientific dairy business, know the first principles of the production and handling of milk.

Cow's milk, to be fit for consumption by infants and children, should answer the following requirements: it should be clean; from a healthy herd which has been tuberculin tested; cooled immediately after milking; bottled at once and sealed; contain no preservatives; be of standard and definite chemical analysis and kept cold until delivered to the consumer. Milk from one cow should never be used for infant feeding; but the mixed milk from several cows or a herd.

Ordinary city market milk is not fit for consumption. It is shipped to the city in large cans, hauled through the streets in an uncovered wagon, to the central distributing station, there bottled (and usually in unclean bottles) and distributed, no ice beisg ever near it. Some bottle the milke in delivery wagons from large cans the bottles being dusty and unsterilized. This milk contains many million bacteria, and rapidly sours in warm weather, even if kept on ice.

Tuberculosis is markedly prevalent throughout the United States in dairy cattle. It is estimated that in certain sections it affects from twenty to sixty per cent. of the members of all herds. In Washington 16.9 per cent. of 1,538 cattle tested reacted to the test. It is conceded by all that local tuberculosis in the udder, will result in contamination of the milk with tubercle bacilli, and that in other forms of bovine tuberculosis, as of the intestine and lungs, great quantities of bacilli are excreted by the discharges which may contaminate the milk. It has been found, for instance, that 70% of all milk examined in Washington, D. C., contained dirt, and microscopic examination of this showed it to be fecal in character, hence the frequency of contamination by tubercle bacilli.

The tuberculin test, tuberculin being the sterilized and filtered glycerine extract of cultures of tubercle bacilli, in the hands of competent men is practically an infallible test and a cow which reacts to the test should be slaughtered at once. This should be under state indemnification, for without state aid the disease will not be eradicated.

If the injected animal is normal the result of the tuberculin injection will be negative, that is she will not show a rise in temperature.

Because of the marked difference between the amount of proteids in cow's milk and mother's milk, cow's milk must be so altered as to change its fat, sugar and proteid content that it will, as nearly as possible, correspond with that of mother's milk. This may be done in several ways, first by using a definite percentage, centrifugal cream in connection with skim milk and a diluent, and the addition of sugar of milk in order to bring the carbohydrate up to the proper amount. Second, by diluting top milk which is a specified number of ounces from the top of a quart bottle of milk which has stood four hours in order to allow the cream to rise.

The ideal method of milk modification is by means of the milk laboratory where a physician's prescription for definite amount of the various ingredients of milk can be written upon a blank and this filled at the laboratory as a prescription for medicine is in a drug store. The best example of this is the Walker-Gordon laboratory which has established branches in many of the largest cities of the United States. A modifying laboratory has been in operation in connection with the experiment station of the Kentucky Agricultural College of Lexington, Ky., for several years and we are pleased to announce that the Milk Commission of the Jefferson County Medical Society will son establish such a laboratory in Louisville.

To obtain a proper conception of milk modification it is positively necessary for one to think of a milk mixture as presenting a given percentage of the principal ingredients of milk, namely, fat sugar and proteid and not of how many ounces it takes to make a certain solution or how many times a given quantity of milk is to be diluted. One must think in percentages and not in ounces. He must remember that the basis of all prescription modification is the average analysis of mother's milk and cow's milk.

Dr. T. M. Rotch of Boston first suggested the establishment of milk laboratories and to him and the Messrs. Walker and Gordon are due the developments along this line.

The home modification may be accomplished in a various number of ways some more or less complicated, all however having the same end in view, that of combining a cream, milk, sugar and diluent in such proportions that when analyzed it will show a result similar to an analysis of mother's milk.

RESULTS OF ANTISTREPTOCOCCUS SERUM IN SCARLATINA.

By Henry U. Robinson, M. D.

VISITING PHYSICIAN HEBREW SHELTERING HOUSE; ASSISTANT IN GYNECOLOGY POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, NEW YORK.

Having had very favorable results with the antistreptococcus serum in scarlatina, Mr. President and gentlemen, I will cite some of the cases, not for the only purpose of showing my success in a number of cases (for any physician can do that) but with the view of encouraging its more general use; for I believe that serum therapy in this and in other infectious diseases will become the prevailing and proper treatment in the near future.

Case I. B. W., girl 2 years. Was called to see her in the morning with the history that the previous afternoon, had several attacks of vomiting, followed during the night by a high fever, flushed face, red eruption appearing on neck and body and complaining of pain in the throat, they had given her castor oil, but were afraid to sponge or do anything else.

My examination revealed a scarlatinal rash on neck, body and beginning to extend to the extremities, tonsils enlarged and

---

*Read by invitation at Medical Society County of Kings, Section on Pediatrics. April 17, 1908.

presenting the appearance of a catarrhal inflammation, tongue coated, temperature 103, pulse 130.

I prescribed eight ¼ gr. doses of calomel at 30 minute intervals, the usual iron mixture to be given after the bowels had moved and orders to sponge child with diluted alcohol and plenty of water to drink.

Was called again in the evening, as "the child was getting worse, fever higher, breathing a little more difficult, that a woman neighbor who knows (and in my section we frequently encounter hindrance from neighbors who think they know) had looked into the throat, saw white spots, it was diphtheria and that the mother better have the doctor give an immediate injection, (presumably antitoxin) or she might lose the child."

My examination showed the throat to be a little redder than in the morning, white spots being present, temperature was 104. Quieted parents by telling them it was part of the symptoms of scarlet, they should now give the iron mixture and I took culture of throat for examination. Next morning found child had had a restless night, whole body and extremities covered with an abundant rash, both tonsils and portions of pharyngeal wall covered with white exudate, temperature 104, pulse 140. Directed to continue iron mixture, cold compress around neck, sponge, and spray with diluted hydrogen peroxide.

The following afternoon, the report showed no Klebs-Loeffler bacilli, so went to patient. On examining her found that symptoms had not abated in the least, tongue typical strawberry, tonsils markedly enlarged, whole pharyngeal wall and nasopharynx covered with an abundant exudate, nasal breathing rather difficult, cervical glands swollen, rectal temp. 105, pulse 150 and child in state of semi-stupor.

After my examination and bearing in mind that report was negative and that scarlet fever presenting such anginose symptoms was due to a streptococcemia, I injected child on the side of the abdomen with 20 c.c. polyvalent antistreptococcus serum (Park, Davis & Co.), gave Dobell's spray instead of the hydrogen peroxide and same iron mixture. The next morning there was little change but child no worce. But the following morning about 36 hours after the injection the child felt altogether differently. The throat was not so sore, the exudate much less, thinner and smaller in extent, the breathing easier, cervical glands slightly enlarged, temp. 102, pulse 120. From that time temperature began to gradually drop to normal, child became brighter, the skin coming off in large flakes, shedding being complete in about five weeks.

There were no complications and the girl got well.

This favorable result induced me to try the serum in more scarlatina cases.

I then tried it in two cases, a boy (M. F.) and girl (C. S.) each two years. In one using 10 c.c. antistreptococcus of Park, Davis and in the other 10 c.c of F. Sterns & Co., proteolytic serum. But these two cases presented the mild type of the disease before injecting, they having a temperature of 102 and pulse 130 with mild catarrhal pharyngitis and I felt that they got well inspite of, not on account of, the injection. Both recovered without complications; so I determined to use the serum only on cases which should show a temperature of at least 104 and marked anginose symptoms.

Case IV. Boy, S. K., age 7 years. Called and found he had severe attack of scarlet, body and extremities covered with abundant rash, face flushed, herpetic eruption on lips, especially near commissure, lips pale, strawbery tongue, tonsils enlarged with white exudate upon them, breathing rather difficult, cervical glands enlarged, temp. 105, pulse 140. They had already cleared bowels with castor oil and rectal injection. Gave child injection of of 10 c.c. antistreptococcus serum, prescribed aconite and iron mixture, sponge with diluted alcohol and Dobell spray for throat. Saw little improvement until about 40 hours later when fever was down to 102.4, pulse 124, rash fading, white exudate on tonsils still present but not so abundant, breathing better and child more comfortable. Mother told me she noticed child was beginning to feel better for the last few hours. Peeling commenced few days later and boy made an uneventful recovery without complications.

Case V. Four cases in one family, on two of whom I used it. Parents recently arrived from Russia. First two, a girl G. of 11 and boy P. of 5 years had what mother thought was not a severe attack, at least not serious enough for a doctor. Besides having the dread of most newly arrived foreigners, that the doctor would report the case to the board of health and then her children forcibly taken to the hospital.

Later girl M. of 14 and boy S. of 7 years were stricken with the severe type. Mother had no alternate, had to call a doctor. I was called at night. Told them I had to report all cases and advised injection in these last two. Symptoms of the boy S. were severe, his body being covered with a rather brilliant rash, tonsils, pharynx and nasopharynx covered with a continuous patch of exudate, breathing difficult, cervical glands enlarged on both sides, temp. 105.4, pulse 150 and child in a state of more than semi-stupor. The girl's symptoms were milder, yet severe, she complaining of pain and stiffness in both knees. I hinted hospital, which set up a wail of tears from the mother with an obstinate refusal. So I injected boy with 20 c.c. and girl with 10 c.c. antistreptococcus serum, advised rectal enema, cold compress around neck, to swab throat with diluted solution of Dobell and iron mixture internally. The girl received same treatment.

The next day both children were little brighter, the boy still being apathetic. The following morning however, that is 36 hours after injection, the boy was sitting up, smiling, and answered questions intelligently. Temperature down to 102, pulse 120. Throat still dirty but exudate thinner. The girl's knees also better. This improvement continued but throat still remaining dirty in boy, I took culture although his condition was now good with but a temperature of 102 and pulse 120.

Culture proved positive to Klebs-Loeffler so injected diphtheria antitoxin. Both children rapidly convalesced, recovered their appetites and gained in strength. Peeling was complete in five weeks, no complications following these two. But the younger boy P. of 5, who was not injected, developed an acute nephritis.

I have lately used F. Stearns & Co., protolytic serum in a fairly severe case, and the child is getting along nicely, but as peeling is not as yet complete, I withhold report.

Now the points of the beneficial effects from the serum that I noticed were:

That 1. The fever and pulse were reduced in about 36 hours.
2. That a serious case was made mild.
3. That there were no complications in the serious cases where we would expect them.
4. A favorable convalescence.

I think that just a little literature would not be amiss as to the question, Is scarlet fever a streptococcus infection?

Baginsky, D'Espine and Moser believe that scarlet fever is due to a streptococcus. Hubner, Marmorek, Slawyls and Pearce claim that the origin of the disease is due to some agent which has not as yet been discovered. The theory has been advanced that scarlet fever is produced by a (symbiosis) i. e. intimate association of a streptococcus and an unknown virus each dependent on the other. In 1899, Page in cultures from the throats of 24 patients ill with scarlet fever found streptococci in 23 instances.

In 1903, Weaver made a series of cultural investigations from the throats of scarlet fever patients. His conclusions are as follows:

1. "Streptococci are almost always if not constantly, present in the throat in cases of scarlatina. In the early stages they are usually in very large numbers, becoming less numerous as the disease progresses.

2. "The streptococci in the throat of scarlatina patients resist drying as long as the other bacteria usually present, and they often outlive all other forms, being alive as long as 90 days after the material is collected.

3. "These streptococci remain alive for a long time in milk.

4. "A small amount of sugar in nutrient media increases their value for the cultivation of streptococci.

5. "Streptococci from scarlatinal anginas are not different from streptococci from other sources so far as cultural and morphologic peculiarities are concerned."

The presence of streptococci in the blood of scarlatina has been observed in 30 cases by Crooke, Frankel and Tiewdenburg, Raskier, Leubarth, Kurth and Babe. (Jos. McFarland's Pathology) also frequently found in the urine of scarlet fever patients, Courtois having found streptococci in the urine of 91% of the cases examined by him while patient was suffering from an attack of albuminuria and in 27% of those without albuminuria.

Escherich and Moser, in the Annalsniderspital at Vienna, since 1902 have had remarkable results in the serum treatment of scarlet fever. The dose of the serum is quite large, but no injurious results have been noticed.

Shaw says that the mortality average in this hospital was 14.5 per cent. for four years before the serum treatment was adopted, and that since its use the average mortality rate for four years was 8 per cent. He also says that for the same period in other scarlet fever hospitals in Vienna the mortality when the serum was not used averaged 13.1 per cent.

Now in conclusion, whether streptococci alone or in symbiosis with other organisms is the cause of scarlatina; streptococci are present, especially in the severer types, making the disease more serious with a tendency to complications. So on the same principal that an anti is used for the toxin of diphtheria, I use an anti against the family streptococcus and have found as mentioned before that

1. It reduces the temperature and pulse in about 36 hours.
2. Makes a serious case mild by allaying unfavorable symptoms.
3. Prevents or curtails complications.
4. Aids in a favorable convalescence.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Section on Pediatrics.

Stated Meeting Held April 17, 1908.

Dr. A. D. Smith, Chairman.

I. REPORT OF A CASE OF HEREDITARY SYPHILIS TREATED BY INTRAMUSCULAR INJECTIONS OF MERCURY.—Read by F. B. Van Wart, M. D. The case was a female child, first seen at age of fourteen weeks. The father was healthy. The mother denied syphilis, but said she had recently had "tonsillitis" lasting three months; her hair was falling out, and she had "pimples" on her body. (This eruption was not examined). There were no other children in the family, and there had been no miscarriages. The child was born at a normal labor; she had "snuffles" at birth. She was fed on condensed and malted milk. For a month before Dr. Van Wart saw her, the child had a sore on the upper lip, beginning as a small pimple; when Dr. Van Wart saw the child, there was a large ulcer on the upper lip about the size and shape of half a fifty-cent piece, nearly corresponding to a "comforter" which the child was using. The cervical, axillary and inguinal glands were enlarged; the epitrochlears were not felt. There was some lacrimation. There was *no eruption;* there was no cough, and the heart and lungs were normal. Stools were green and numbered six a day. Diagnosis of syphilis was not made at this time; the child's diet and general condition were attended to, and the ulcer kept clean. One month later, during which there was no improvement, an eruption appeared on arms, legs and body; at first this took the form of dark red papules, which soon became scaly. The diagnosis of syphilis was then made and treatment was then begun, consisting of Gray Powder by mouth and inunctions of unguentum hydrargyri. No improvement was noticed after a thorough trial; then the above treatment was stopped, and injections were begun as follows: A solution of salicylate of mercury in olive oil (gr. v. to ℥i) was used. One-fifth of a grain of the salicylate was injected into the buttock every two days. Two days after the first injection, the eruption began to fade, and the lip began to heal. Improvement was steady, and the child is in very good condition at present.

Dr. Beck asked how long the treatment should be kept up.

Dr. Smith, who had seen the case with Dr. Van Wart, said that treatment should be kept up for from nine to twelve months. He thought the treatment worthy of a trial by pediatrists, inasmuch as most authorities now favored it for adults.

Dr. Kerr has had some trouble with the injections, as the children seem to suffer considerable pain and discomfort. He could not agree, he said, with some of the advocates of this treatment, who said that it was entirely painless. He asked for Dr. Bartley's opinion on the solubility of salicylate of mercury in the tissues.

Dr. Bartley said that he thought the salicylate was deposited in the tissues, and then ionized and absorbed *very slowly.*

Dr. Robinson said that the advantages of the injection treatment were the certainty that the patient actually got the treatment prescribed, the accuracy of the dosage, and the rapidity of action.

Dr. Reade said that the later the symptoms of hereditary syphilis appeared the better the prognosis.

II. RESULTS OF ANTISTREPTOCOCCUS SERUM IN SCARLATINA.—Henry U. Robinson, M. D., of Manhattan. Dr. Robinson's first case was a girl of two years, who had been taken ill on the preceding evening with vomiting, fever and sore throat; the next day, a scarlatinal rash appeared on neck and body; T. 103° F; throat congested; later in the day, the child seemed worse; the tonsils were covered with white spots, and the family thought the child had diphtheria. The next day, the throat was covered with a white exudate, from which a culture was taken. The scarlatinal rash was present all this time. The culture was negative for Klebs-Loeffler bacilli, but the family were so sure that the child had diphtheria that they demanded an injection of antitoxin be given the child. This Dr. Robinson agreed to, but he decided to give astistreptococcus serum instead of diphtheria antitoxin. He injected 20 c.c. of Parke-Davis antistreptococcus serum; 36 hours later, the temperature dropped, the throat cleared up and all symptoms subsided. Dr. Robinson's next two cases were mild, in one he used 10 c.c of Parke-Davis antistreptococcus serum, in the other 10 c.c. of Stern's proteolytic serum. The cases were so mild that he does not think the serum had any effect. The next case was a very severe one in a boy of four. An injection of 10 c. c. of antistreptococcus serum was followed by a drop in temperature and marked improvement 40 hours afterwards. The next two cases were also severe, and showed marked improvement 30 hours after injection. Another case in the same family was not given the serum; this case developed acute nephritis. In none of the cases in which serum was used were there any complications.

Dr. Spingarn said that the weight of opinion in Germany and Russia was against the serum, although some excellent observers were advocating it. He told in detail the excellent results obtained in Moscow with this serum in scarlet fever; it had been regularly and carefully given to every case in two scarlet fever hospitals for two years, and a considerable lowering of mortality was reported; however the Moscow observers had not noticed any lessening of the complications as a result of the serum.

Dr. Woglom called attention to the fact that antistreptococcus serum acts against the cocci, while diphtheria antitoxin acts against the *toxin* of the diphtheria bacilli. Klebs-Loeffler bacilli will grow in diphtheria antitoxin, but streptococci will not grow in antistreptococcus serum. Hence it is not fair to draw any analogy between the serum and the antitoxin.

Dr. Reade thought that the serum should be tried thoroughly, and advocated giving larger doses.

III. A REVIEW OF GERMAN PEDIATRIC LITERATURE FOR 1907.—By Alexander Spingarn, M. D. This paper was not discussed owing to the lateness of the hour.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 156 Fifth Ave., New York.

Telephone 1032 Gramercy.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES. Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL.

THE ESTABLISHMENT OF INFANT'S MILK DEPOTS.

A plan has been formulated and soon will be put into operation in New York City, which is designed to lower the infant death rate.

Fifteen babies out of every one hundred born in the metropolis die before they are one year of age. It is conceded that this death rate is in great part due to diarrhoeal diseases, produced by improper or unwholesome milk fed to infants.

To combat this evil, the New York Milk Committee will establish depots in various tenement house districts, where the mothers may obtain properly modified clean milk.

This will be sold to the mother at cost price, provided she agrees to have her hygienic management of the infant supervised by the corps of doctors and special nurses who will stand ready to instruct her how to prevent the dreaded "Summer Complaint."

The ultimate object of the movement will be to encourage breast feeding or at least mixed feeding wherever possible. Classes will be held regularly to instruct the mothers in the care of the baby. What a far reaching and beneficient effect such a plan must have, can be readily appreciated.

Diet kitchens alone, without supervision and instruction must and do fail in appreciably lowering the infant mortality.

In France the Consultations de Nourissones after which these stations will be patterned, have been succcessful beyond expectation.

The infant mortality in our large cities has mainly been lowered by the methods advocated and taught by pediatricians. In the last five years no marked decrease has been made.

If these Infant Depots are copied in other parts of the country and instruction to mothers given, we will see a further lowering of the mortality statistics, as a greater number of mothers will be encouraged to breast feed their offspring, and a knowledge of practical and clean methods of handling cow's milk will be spread to the mothers in the land.

May 25, 1908.

To the Editor of Pediatrics.

Dear Sir:—I write to ask if in your opinion it is possible to express numerically the physical condition of a child under one year of age. My reason in doing so is to determine the feasibility of a chart on which the physical progress of babies brought to milk depots which the New York Milk Committee intends to open June 15th may be graphically expressed. This chart, like a weight chart, would be divided horizontally into weeks and days but would run vertically from zero or death to 100 or perfect health. A baby brought to the depot in a dangerous condition would be placed close to the bottom of the chart, near death. If it improved ever so slightly the line would rise and the mother, taking courage, would renew her efforts in its behalf.

On the other hand a sudden drop of the line from good, fair, or perfect would alarm the mother who would thus see, if the fault was one of improper care or feeding, how important is her duty to her child.

I can see no reason why conditions capable of comparison cannot be more accurately expressed by numbers than by words. This fact is recognized, when, instead of saying "a pulse is high," "a temperature low," "a man is heavy," "an arm is long," we express these degrees in figures, thus conveying to hundredths and even thousandths the precise idea in our minds. "Perfect," "splendid," "good," "fair," "poor," "bad," "dangerous," "hopeless," as applied to health are all terms of comparison just as are "high," "low," "heavy," and "long" as compared to pulse, temperature, weight and length. Yet who is able to say absolutely what is meant by "fair health" or "good health," by "bad health" or "very poor health?" The answers to these questions necessarily are lengthy and involved; and they rarely suggest the same thing to different individuals.

I should be greatly interested in knowing whether in the opinion of the readers of Pediatrics an infant's score card could not be devised which, by a careful and scientific analysis, arranged in such detail as to minimize the possibility of wrong judgment, would give mothers some definite idea of the position occupied by their babies on the scale ranging from death to perfect health.

Sincerely yours,

WILBUR O. PHILLIPS.

Secretary.

P. S.—I enclose a rough draft of a score card as a possible suggestion on which to work.

SCORE CARD.

Condition of baby when presented at depot.

		Perfect Score
Stools:		
1. Light yellow, smooth, all alike, consistency of thin mush	25	25
2. Light yellow, smooth, different, curd	20	
3. Green, different, with mucus	15	
4. Green, curd and mucus	10	
5. Green, curd, mucus and blood, or blood (blood in stool must not be due to hemorrhoid or other causes)		
6. (3) (4) and (5) plus foul odor of decomposition	0	
Tissues:		
Flesh plump and firm, skin moist	35	35
Flesh flabby, skin dry	20	
Flesh flabby, skin loose, dry and leathery	10	
Flesh flabby, skin, loose, dry and leathery and eyes sunken, fontanell depressed	0	
Weight:		
Average gain since birth, 4 oz. and more per week (computed from present weight and estimated weight at birth)	40	40
Average gain since birth 3 oz.—4 oz. per week.	25	
Average gain since birth 2 to 3 oz. per week	15	
Average gain since birth 1 oz.	5	
No gain or loss	0	
		100

ABSTRACTS.

On Eruptions of the Napkin Region in Infants. — Adamson. (British Jour. of Children's Diseases, Jan., 1908) makes a plea for the more careful study of infants having eruptions in the napkin region; that is the region covered by the diaper. He says that too often cases of syphilis are overlooked, and many non-specifics are treated as syphilits. By the napkin region, he not only includes the lower abdomen, buttocks, the genitals and the thighs, but also the other parts which come in contact with the diaper, when the infant is in a flexed position; namely the calves and the heels. The diaper covers a number of convex surfaces separated by deep sulci; thus the lower part of the abdomen, the genitals, the perineum, the upper and lower parts of the thighs, the calves, etc. The convex surfaces are subjected to friction and pressure from the diaper, while the flexures or sulci are protected from friction but afford warm areas for the growth of microorganisms. Adamson says that often specific diseases are called eczema or intertrigo. Eczema does not occur on the buttock but its seat is on the face and scalp, while intertrigo is a term used to cover any moist lesion of the flexures, either specific or non-specific. He divides the lesions of this region into

(1) simple infantile erythemas.
(2) streptococcic impetigos.
(3) seborrhoic dermatitis.
(1) The simple infantile erythema is again subdivided into
(a) simple erythema.
(b) erythemato-vesicular or erosive.
(c) papular or post erosive.
(d) ulcerative.

All these forms come on the convex areas and do not attack the sulci or flexures. They vary from the simple erythematous to the ulcerative forms. As these forms only attack the prominent convex surfaces they strongly suggest local irritation, from wet or soiled napkins, although a gastro-intestinal toxaemia may cause them.

They differ from syphilis:

(1) In that they are limited to the diaper region.

(2) Lesions are absent from the face, palms of hands and soles of the feet.

(3) They have no characteristic coppery color.

(4) Snuffles, fissures of the lips, hoarse cry, etc., are absent.

(5) Rapidly get well when the cause is removed.

II. *Seborrhoic Dermatitis:* The eruption covers the entire diaper region, and is of a uniform bright red color with sharply defined margins. In the sulci, the eruption is moist or oozing. Beyond the margins, small red scaly papules which sometimes coalesce. This condition is not confined to the diaper region, but is seen in other sulci and flexures, as around the umbilicus, behind the ears, and in the folds of the neck. The scalp always has a patch of a red scaly eruption on its vertex, and it is usually found that the mother has a seborrhoea capitis.

Adamson believes this condition to be micrococcic, due to the staphylococcus epidermitis albus.

It is differentiated from syphilis, by the healthy complexion, the bright red color and the involvement of the flexures. And differentiated from erythema, by its situation in the flexures, its sharp margin and its occurrence on the scalp—and from Impetigo, by the absence of phyctenulae.

III. *Streptoccic Impetigo.* The lesions retain their phyctenular character instead of drying into crusts. It is not confined to the napkin region, but attacks the body and face as well. Infected fingers are frequently seen in this condition.

IV. *Congenital Syphilis.* Those born with the bullous eruption usually die. In the common forms of syphilis, there are disk-like patches of a coppery brown tint, or there is a macular or maculopapular eruption. It is characteristic, that these lesions tend to be uniform in size, attack all parts of the body, are marked upon the palms of the hands and soles of the feet, about the nose and the mouth, about the anus, thighs and the buttocks. Eruption comes on early in life (about the 4th to the 8th week) and does not yield to any other than antisyphilitic treatment.

B. F. Ochs.

Heredo-Syphilitique a Treatment Specifique.—(Gazette des Hopitaux, March, 1908)—In a discussion before the above society, Dr. M. Vechère says that mercury has a direct action on the spirocheta pallida in the blood and on the lesions due to its presence. It also stands first in line as a preventative and as a tonic for the blood-changes, caused by germ. The iodides act only on the changes in the walls of the vessels and their consequences caused by the presence of the spirrocheta pallida. The tabetic changes in the optic nerve are never arrested by mercury according to Antonelli. It does not even prevent the involvement of the other eye. It is better to rely on a thorough mercurial treatment during the first years of the infection be it acquired or congenital as a preventative of so-called parasyphilitic lesions. Ozerme says that intraocular spontaneous hemorrhages of young subjects are due to heredo-syphilitic lesions of the eye. Children should be subjected to treatment immediately after birth up to the period of full development. This is meant equally well for weak and robust children, especially so for those showing doubtful manifestations (hybrid tuberculo-syphilitics and those showing the well known hereditary stigmata. The only reliable remedy in all these cases is mercury.

The action of mercury on tabes is to be studied further, as the tabetic affections seem to be arrested sometimes, even without the administration of mercury.

E. W. Dettrich.

Forme Scrofuloide de la Syphilis.— Progrès Medicale, March, 1908, M. E. Sergent)—Sergent claims a direct relation between heredo-syphilis and tuberculosis. Heredo-syphilis as well as the acquired form predisposes to tuberculosis. It is very difficult to differentiate clinically their cutaneous manifestations as well as their visceral, glandular and articular affections. He describes a scrofuloid form of syphilis in a woman, whose complaint began shortly after marrying. For about seven years she suffered from a series of cutaneous, glandular, osseous and articular lesions, which had been diagnosed by many physicians and surgeons to be of tuberculous origin. Their syphilitic nature however was recognized by the later appearance of a frontal exostosis and an osteoarthritis of the elbow, which quickly disappeared under specific treatment.

E. W. Dettrich.

Fibrolysin Treatment of Perigastric Adhesions.– In one case of extensive perigastric adhesions, the following solution was employed by C. Michael: Thiosinamine, 2 Gm.; glycerin, 4 Cc.; aq. dest., 14 Cc. Two injections of 1 Cc. each were given; later, half a vial (1.15 Cc.) of fibrolysin (a sterilized solution of thiosinamine and sodium salicylate) was injected intramuscularly every second day. All in all, 23 Cc. of fibrolysin were employed. The injections were painless and not accompanied by any untoward symptoms. In this and a second case the results were astonishing, in that the pains, which had been unusually severe, disappeared completely. The patients gained in weight during the treatment. In both instances the adhesions were the results of gastric ulcers, and operation previously performed verified the diagnosis.—Klin.-therap. Woch., Jan. 6, 1908.

Diphtheria.— (Lancet, April 18)—Sambon calls attention to the not infrequent simultaneous occurrence of epidemics of diphtheria among humans and various animals, especially pigeons, turkeys and other birds. Considering that human diphtheria is easily transmitted by inoculation to many kinds of animals it is only reasonable to suppose that it may be conveyed by them to man. He compares our position with relation to diphtheria, in regard to reciprocal transmission, with that concerning tuberculosis. While, however, bacteriology and experimentation must settle the relation between human and animal diphtheria, the study of the epidemiology of the disease must not be neglected. Hitherto it has been entirely misunderstood, many medical officers of health even yet believing it to be brought about by faulty sanitary circumstances. A careful examination of reports of numerous outbreaks shows clearly that insanitary conditions of dwellings, defective sewerage, polluted water supplies, poverty and uncleanliness have no special connection with the incidence of diphtheria, though by lowering resistance they may favor the spread of disease. Longstaff has shown the coincidence of a low diphtheria mortality with the greatest density of population and the highest general mortality, while in other (country) districts where opposite conditions prevail a high diphtheria mortality coexists. Diphtheria shows itself with equal frequency and intensity among the poor and the rich, in the filthiest tenement houses and in the healthiest surroundings. It is eminently a disease of rural districts, scattered over wide areas, most cases occurring in isolated farm houses, without any traceable communication. As soon as we recognize the unity of the disease in man and in the lower animals we immediately understand its geographical peculiarities, its seasonal prevalence, its cyclical recrudescences, its rural distribution, its preference for the neighborhood of water bodies, its progress along the direction of prevailing winds, the frequent occurrence of cases in isolated farmhouses and in out-of-the-way places along the sea coast, the greater prevalence among children, especially female children, the heavier toll it levies on mounted troops as compared with infantry, the connection with manure, the recent increase in towns, the unimportance of geologic, orographic, meteorologic and sanitary conditions. He refers to the agency of flies, which feed on horse manure, as transmitters, and the frequent occurrence of the disease in fowls, turkeys, peafowl, guinea fowl, pheasants and partridges, and especially quail, and cites the passage in Numbers, xi, 31-34, as being probably an instance of the transference of diphtheria from quail to man. He has also found false membranes in the oviduct of a hen pheasant, from which he concludes that raw eggs may play a part in the transmission of the disease.—J. A. M. A., May 16, 1908.

Diagnosis of Scarlet Fever.—Dr. W. N. Barlow, quoted in The Therapist of Jan. 15, 1908, says:

"The diagnosis of scarlet fever is not always the simple affair which many appear to think it is, and, in my experience, the mistake in diagnosis most often made is that too much attention is paid to the presence of a rash, and the character of such rash. Scarlet fever is a disease with *three* main characteristics—a definite rash, a definite sore throat, and a definite condition of the tongue; but it must be remembered that every sore throat is not scarlet fever, every strawberry tongue is not scarlet fever, and, above all, every erythematous rash is not scarlet fever, nor indeed is every scarlet fever rash erythematous. These three signs must be considered in relation to, and in conjunction with, one another. Very often the rash of scarlet fever simulates that of measles, but the distribution and accompanying symptoms are different. Again, the condition of the tongue and the rash bear a definite relationship to one another; the tongue is furred when the rash is out, the tongue is strawberry when the rash has faded. One does not expect to find a brilliant rash with a strawberry tongue; indeed, in the vast majority of cases one can tell, from the state of the tongue, the day of onset of the disease. Some doctors, if they do not see the rash, will not diagnose scarlet fever, although the throat and tongue are typical of the disease. The rash may last only a few hours in some cases; on the other hand, scarlet fever is often erroneously diagnosed when an erythematous rash alone is present, and there is no sore throat or tongue."—The Annals of Gyn. and Ped., April, 1908.

Disinfection of Rooms, etc., by "Autane."—One of the great objections to disinfection of rooms by formaldehyde vapour, according to Flügge's method, is that a special apparatus is necessary, and in spite of efforts to simplify the technique it still remains rather complicated. Last year Eichengrünn made known in the *Ztsch. f. angen. Chem.*, a new product, to which he gave the name of "Autane," consisting of a mixture of peroxide of barium or strontium, with paraformol or trioxymethylene. This mixture, inert in the dry state, gives off, in the presence of water, vapour of formaldehyde and water vapour. At ordinary temperature a relatively small quantity of water gives a slow and continued disengagement of formaldehyde vapour. If tepid water is used, the vapour is disengaged much more rapidly, and is diffused at once in the atmosphere. It is a catalytic action, the alkaline peroxide in the nascent state depolymerising the trioxymethlyene into formaldehyde, which in part dissolves, and is in part disengaged in the gaseous state. The efficiency of this substance as a disinfectant has been favourably reported on by several workers, including Wesenberg, Selter, Nieter, and Tomarkin and Heller. Fornario (*Rev. d'hyg.*, Paris, tome xxx. No. 1) gives the results obtained by him in some experiments made by him at the Pasteur Institute, Lille. He conducted his experiments in an apartment of 60 cubic metres (over 2000 cubic feet), which was not air-tight. He used for this room 2400 grms. of autane powder and about 2300 c.c. of water from 20° to 25° C., in order to assure the slow development of the vapour, the process of disinfection taking seven hours. Previous observers, with the exception of Nieter, consider that complete and careful shutting up of the chinks, windows, doors, keyholes, etc., is unnecessary, but Fornario found that disinfection was much more complete when the apartment was practically hermetically closed. He also differs from them in this, that whereas they attribute to the gas generated from autane a considerable power of penetration, his experiments show that it does not penetrate well, *i. e.* that it is a good surface disinfectant only. The ease with which it can be employed, without special apparatus, renders its use convenient for the rapid disinfection of small apartments, conveyances, railway carriages, consulting rooms, etc.—The Edinburgh Med. Jour., May, 1908.

Arterio-Sclerosis in the Young.— F. Fremon Smith (Am. Jour. of Med. Sciences, April 4, p. 1025).—A boy, aged 12, had a pinched and haggard appearence, and his complexion, figure and carriage, suggested aged man. Examination showed diffuse sclerosis of all his arteries, with calcification as advanced as in his father. There was no evidence of heart or kidney disease. The boy was mentally bright but physically stunted and thin, and his muscles were undeveloped.

His father, a mulatto, aged 32, had obliterative arteritis with gangrene of the toes. His arteries were sclerosed and beaded. He gave a history of syphilis contracted at 18. Evidently the arterio-sclerosis in the boy was due to congenital syphilis.

References to arterio-sclerosis in the young occur in literature since the beginning of the last century. Portal, in his work on anatomy published in 1803, stated that "rarely the arteries of young persons became ossified." In recent literature, Romberg states that arterio-sclerosis augments with rapidity after the fifteenth year. In 1477 necropsies performed at all ages and in all conditions he found the arteries diffusely thickened in 2 subjects at the ages of 1 and 14 respectively, and in 5.8 per cent. of the subjects between the ages of 15 and 19. The recent studies of the pathology of arterio-sclerosis by Ortner, Flexner, Thayer, and others have shown the frequency of arterio-sclerosis in the young, and have thrown light upon the relation between the acute infections and arterial disease. In 189 persons who had long recovered from typhoid fever, Thayer found that between the ages of 10 and 50, 48 per cent. had palpable arteries as compared with 17.5 per cent. in ordinary healthy individuals. Symnitzky in 138 necropsies on persons under the age of 25 years who died from various infections found sclerotic changes in the aortic wall in 38, or 17.5 per cent. Excluding subjects under the age of two years, in which these changes did not appear, they were found in 48 per cent. As to the etiology, Prof. Osler states: "That heredity plays a most important role is shown in the cases to which arterio-sclerosis sets in early in life in individuals in whom none of the recognized etiological factors can be found." Congenital syphilis is a well-recognized cause but its importance has been exaggerated by earlier writers who were not aware of the part played by acute infections.—The Medical Review, May, '08.

Hypertrophic Stenosis of the Pylorus in Infants.—H. Dufour and P. Fredet, Paris, (Revue de Chirurgie, February, 1908)—The authors in reviewing the literature and compiling the results of treatment, favor pyloroplasty as the most efficient and safest surgical procedure for the cure of true hypertrophic pyloric stenosis of infants. Stenosis may be of three varieties: (1) Atresia, a rare congenital malformation which is regularly fatal; (2) spasm without a pyloric tumor, which is frequent and amenable to medical treatment; and (3) hypertrophic stenosis with a pyloric tumor, which may be complicated by spasm, and which necessitates surgical intervention. We can distinguish two stages in the course of the cases. The first is characterized by frequent vomiting and rapid loss of weight; the stomach is dilated, but no peristalsis can be observed. In the second stage, or phase, the vomiting becomes infrequent and with this the denutrition seems to make but slow progress; peristalsis can now be easily seen. The explosive nature of the vomiting is a feature worthy of note in all cases; obstipation and oliguria are usually present.

As regards the pathology of the condition, the stenosis seems to be due to an hypertrophy of the muscular fibers of the pylorus, principally of the circular layers, attended with some proliferation of the connective tissue elements. In their own case, the authors found the pyloric musculature to measure 5 mm. in thickness. Another important lesion, and one which contributes largely to the occlusion of the pyloric orifice is the redundancy of the mucous membrane. This is usually disposed in large longitudinal folds which fill up the constricted lumen of the gut.

Although some surgeons report good results with the use of Loreta's method of divulsion, the authors do not favor this procedure. They hold the view that a pyloroplasty without injuring the mucous membrane should be done whenever possible. If this cannot be executed, or, if it should fail to give the proper result, then gastroenterostomy is in order.—Am. Jour. Surgery, May, 1908.

Localization and Clinical Symptoms of Intracranial Hemorrhage in the Newborn.— (L. Seitz, München. Münchener Medizinische Wochenscrift, March 24, 1908)—The author's material consisted of 23 cases. At autopsy the development of artifacts was avoided by making gross frozen sections of the head. The hemorrhage was regularly venous in origin and practically always between dura and pia. In subtentorial bleeding the quantity of blood was always small—tea to tablespoonful. The symptoms are quite characteristic, the children not being born asphyctic, remain normal for a few hours, are always quiet and then slowly show signs of bulbar compression—irregular, shallow, choppy respiration, and blueish yellow tint. They resemble cases of atalectesis. Death occurs in 24-48 hours.

In supratentorial bleeding, which usually is unilateral, no abnormal signs are noted on the first day, but on the second a characteristic restlessness and continuous crying develop. Later compression symptoms, chiefly respiratory, coma, etc., appear. Local signs due to motor irritation and later paresis are seen, referable chiefly to the facial, leg and arm centers. The fontanelles bulge, and as the congestion increases the general brain symptoms overshadow the local ones and serve to unsettle the localizing of the lesion. Death most commonly occurs on the fourth to eighth day. Although the skull of the newborn permits of a certain amount of increase of the intracranial contents, it becomes as inexpansible as that of the adult when this limit has been reached; therefore progressive signs of pressure indicate operation. Seitz operated upon one case, relieving a supratentorial hemorrhage, but the child succumbed to a not diagnosed intratentorial hematoma.

Of the 23 cases, 5 recovered, and of these all had supratentorial hemorrhage; 3 recovered completely. Therapeutically, avoidance of all external stimuli (place in the incubator), small doses of bromide (3-4 grains), cool applications to the head and feeding by gavage are indicated. If the symptoms are purely local local non-interference should be practiced; if progressive and general, an exploratory craniotomy is proper. Subtentorial hemorrhage is not amenable to surgical interference and lumbar puncture affords but transitory relief. Of the 23 cases, 6 were spontaneous and easy labors, so that the forceps should not always be blamed. This mode of death is of forensic importance, as apparently healthy children may die suddenly and mysteriously. Seitz mentions Cushing's results of 4 operations with two recoveries.—Am. Jour. Surgery, May, 1908.

Surgery for Children.–(Zentralblatt für Kinderheilkunde, Leipsic, January, 1908)—Bayer reviews his twenty years of surgical work on children and emphasizes the differences between surgery for children and that for adults. The benefits of asepsis are especially prominent in operations on children, and much irrigation, he says, and "thorough disinfection" are better dispensed with. His experience with Bier's constriction hyperemia for joint tuberculosis and phlegmons has not been encouraging, but excellent results have been obtained with prolonged hot local baths for all open septic foci. Tuberculous phalangitis in young children healed under mercurial plaster or else improved to such an extent that only a trivial operation was required to complete the cure. The strips of plaster are left on for several days, with a dressing over them at night of aluminum acetate. He applies the mercurial plaster strips also to tuberculous joints before placing them in a plaster cast, fungous swellings in the soft parts and capsule subside quicker. Wryneck in a new-born infant is treated with daily stretching and remodeling, with light massage, and packs. In an older child he severs the sternocleido muscle under chloroform subcutaneously, and immobilizes the neck. He says that clubfoot in the new-born infant is easily remedied. Until the skin is able to tolerate a little pressure the mother is taught how to twist the foot daily into the corrected position. After a week or two, the foot can be wrapped with a flannel bandage in a correcting position. Strips of plaster to re-inforce the flannel bandage outside are useful. A correcting sandal concludes the treatment long before the child begins to walk. Clubfoot in an older child requires severing of the Achilles tendon, holding the foot in the corrected position by means of a metal sole with wooden splints, fastened on with soft bandages. This is more practical, lighter and more convenient than a cast and allows oversight better. Still older children require wedge-shaped excision of the tarsus and clubfoot boots. Congenital dislocations, especially of the hip joint, are corrected as soon as the child is out of diapers (from the second year on). The difficulties increase as the child grows older, and may be serious even at seven and may sometimes prove absolutely insurmountable after ten. Even in apparently irremediable conditions, however, he has occasionally been successful by drawing down the limb, nailing the capsule, with prolonged extension, and final application of a walking apparatus. The joint became firm and the gait much improved. This technic, he thinks, is preferable to more extensive operations liable to prove dangerous. It has been his experience that atresia of the rectum or anus, ruptured umbilical hernia, spina bifida and similar congenital deformities occur only in children with very low resisting powers. Although the deformity was readily corrected, none of the infants in this class long survived. He does not operate for harelip until the child is six months old, and for cleft palate not until 5 or 6 years. He has always had cause to regret his action when he departed from this rule. Fatal enteritis or bronchitis carries off the child operated on too early. With cleft palate the main point is to train the child to speak properly.

Operations for hernia in children give gratifying results. He operates at once in every acute case of tuberculous peritonitis; if not seen until the fifth day or later he does not operate unless there are signs of an abscess or the disease takes a turn for the worse, but after the effusion has been absorbed, then he always opens the abdomen. He has sometimes palpated a tumor-like retroperitoneal effusion behind the bladder—the sequel of peritonitis. Under careful treatment with packs, dieting, catheterization and rectal injections, these effusions generally subsided without leaving a trace. Spontaneous reduction of intussusception occurred in only one of his cases. Malignant intestinal tumors are rare in children; he encountered only one case of carcinoma of the rectum in a girl of 14. In removing a rectal polyp he used to have occasional severe hemorrhage as the pedicle was cut, but this is entirely obviated by ligating it before severing it with the actual cautery. Children with persisting large thymus glands seem to be peculiarly non-resistant, especially to anesthetics. It is hard to diagnose the persisting large thymus; he never met with a tumor in the thymus in a child, but in a case of sudden death of an adult, as the patient sat up in bed, autopsy revealed sarcoma of the thymus. One child had a sarcoma removed from the orbit ten years ago, and is still in good health, as also a boy with sarcoma of the clavicle operated on eight years ago. In the place of the clavicle there is merely a tough cicatrix, but the movements of the arm are unhindered. As a rule, cancer in children seems to be exceptionally malignant. It always behaves like aberrant embryonal tissue, retaining the fetal characteristic of rapid growth. In conclusion, Bayer laments that the most brilliant surgical successes in children are so often undone by an intercurrent enteritis or scarlet fever. He advises always scanty chloroform by the drop method, changing to Billroth mixture as soon as the child is unconscious. Even very young infants take anesthetics well, and wake up ready to eat; cocain, morphin and spinal anesthesia are contraindicated for children.—J. A. M. A., May, 1908.

BOOK REVIEWS.

BRADYCARDIA AND TACHYCARDIA with complete English abstracts and foreign bibliography.—By Prof. Dr. Edmund von Neusser, Professor of the Second Medical Clinic, Vienna; Associate Editor Nothnagel's "Practice of Medicine." Authorized English Translation by Andrew MacFarlane, M. D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College, etc., etc. Part II of a series of monograph-translations from the German on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. 8 vo. 150 pages. Cloth, $1.25.

This little volume is a most important one for as the translator says "The modern work in laboratories upon infections has thrown into the background the consideration of disorders of many of the vital organs." The heart as the *fons et origo* of the circulation must be seriously considered in practically every disease and its condition is many times the most reliable index of the result and best indicates the progress of the affection."

The work considers the causes of Bradycardia toxic, autotoxic from various diseases, as affections of the heart, brain, hysteria, melancholia, etc., from carcinoma of the stomach, gallstone colic, injuries.

In part II Tachycardia is fully discussed, its many causes, its etiology, diagnosis and treatment. The translator has done his part well.

A MANUAL OF THE DISEASES OF INFANTS AND CHILDREN.—By John Ruhrah, M. D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company, 1908. Octavo, pp. 423. Price, $2.00.

Of the hand-books devoted to diseases of children this volume has been very popular and in this, the second edition the author has revised and brought it up to date. The general practitioner as well as the student will find it of much value for clinical reference.

The section on "Medical Inspection of School Children" is of interest. The text is unusually concise and leaves no room for doubt as to the author's meaning, and the illustrations are good.

PEDIATRICS

Vol. XX JULY, 1908 No. 7

ORIGINAL ARTICLES

THE ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN, AND SUGGESTIONS FOR WORK WHICH IT MAY FITTINGLY UNDERTAKE.

Address of the President, Samuel W. Kelley, M. D.,

PROFESSOR DISEASES OF CHILDREN, CLEVELAND COLLEGE OF PHYSICIANS AND SURGEONS, MEDICAL DEPARTMENT

OHIO WESLEYAN UNIVERSITY.

Gentlemen :—

Of the advantages of organization of those who are engaged in the same work no one will ask for proof.

ORGANIZATION.

Organization should tend to union, to amalgamation, therefore we have made the platform of this Association broad enough to afford standing room and working room for everyone whose best professional work has, according to the estimate of his

---

*Second annual meeting of the Association, Great Northern Hotel, Chicago, June 1, 1908.

colleagues, distinguished him in the department of pediatrics. This Association is unique in its requirements for membership. There never was until now, to my knowledge, a medical society in this or any other department of medical science composed entirely of teachers and hospital and dispensary clinicians. We welcome to membership and should have in our ranks every eligible person in this country and in those sister countries whose close proximity, and the frequent interchange of patients, of practitioners and of medical students closely unites our interest and our sympathies.

Splendid work has been done by various pediatric societies with membership representing different localities or sections of the country, and by the Section on Children of The American Medical Association, which is composed not only of pediatricians but of general practitioners and specialists in various departments, the membership varying each year according to the part of the country in which the meeting is held. But there is work that should be undertaken and should be better done by the combined effort of all the teachers and clinicians in this branch—who are most closely in contact with the needs of this department, who naturally have most deeply at heart its best interests, and who occupy positions which should enable them to do most in its behalf.

What, then, are the fields of endeavor which may appropriately engage the attention and receive the labor of an organization such as this?

ENCOURAGE RESEARCH.

If we have among us those who take delight in research work, they can find in pediatric lines numerous avenues inviting their exploration, and we will be glad to hear about and to encourage their journeys into realms little known. The physiology of infancy yet holds many alluring secrets. The fields of digestion and assimilation are still fertile, although long cultivated both empirically and rationally, and even farmed out to dairymen and pharmacists and the manufacturers of proprietary foods, who have endeavored to instruct physicians how to feed children. The physiology and pathology of the blood offer problems which can be elucidated by the combined efforts of the clinician and the highly trained laboratory worker. Let me especially commend to the ambitious explorer the regions of the infections of the new-born and of the infant. I believe he will find here, if only his skill is keen enough to penetrate them, truths hitherto unknown to medical science. I feel that we are upon the eve of the discovery either of new toxic agents or of new laws of reaction against them when they invade the organism in that state of rapid transition from the fetal life to that of the child capable of living in the environment and upon food suitable for the adult. Either the infant's organism reacts differently from that of the adult to known infecting agents, or else it is peculiarly susceptible to pathogens not yet identified. There is also most interesting ground to be searched for the mystery of the new growths. If the matrix of a carcinoma is present at birth, having already originated in the epiblast, what is the inhibiting power that prevents its development until middle life or past? Who among you can tell me whether the physiological resistance to foreign cell encroachment is any different in the young subject from what it is in the old? These are merely random examples. There doubtless occurs to each of you many problems most inviting and most promising of results for research. And there may occur to any one of you either the time and opportunity to work the problem to a solution; or, what is of equal or perhaps greater importance, to direct into the proper channels of investigation some of your talented pupils, who with the enthusiasm of youth, and having the golden years all before them, and with greater advantages perhaps than any of us have ever enjoyed, may be able to make discoveries that will be of the greatest benefit to the race. If there is needed for this part of the work any selfish motive there is even that also to offer you—for "The glory of the teacher is in the success of his pupil."

Or, in the interest of research, may we not be able to influence some merchant prince or board of trustees into supplying the requisite facilities for such investigations? Many important discoveries have been made by independent individual and sometimes poorly equipped investigators; but it seems to me that we by combined effort ought to be able to turn the attention of the explorers into this very attractive and little known scientific wonderland which every human being has to travel between conception and adolescence.

SCIENTIFIC PAPERS.

There is always a place in an organization of this kind for the presentation of scientific professional subjects and for their discussion, and for individual and collective investigations. Problems in practice, reports of cases, methods of treatment, new instruments, operations, appliances and remedies, methods of procedure, hospital and dispensary building, equipment, organization and management—all these are subjects, and there are still many others, which may at different times lay claim upon our attention. All these call for interchange of opinion and for the accumulation of knowledge. The mines are never worked out, and nobody can stake a claim so large as to exclude all others.

RECOGNITION OF VALUABLE SERVICES.

Another work of usefulness to pediatrics for this organization to perform is indicated in Section 3, Article 1, of our By-Laws: "Any physician, scientist, educator, philanthropist, or littérateur not a member of this Association who has merited great distinction by performing very notable service to pediatrics, either directly or through his labors in some field germane to the work of this Association, may, upon recommendation of the entire Senate and unanimous vote of the members present, be invited to attend a meeting of the Association, to receive the title of Guest of the Association of American Teachers of the Diseases of Children, and to address the meeting upon a chosen topic."

Obedience to this By-Law, it appears to me, cannot but serve to encourage meritorious work by such public recognition of service as the bestowal of this honor will signify. The attention of the Senate is now therefore respectfully drawn to their duty in this matter, with the suggestion that if after careful consideration they decide upon the bestowal of this honor at the next annual meeting, they formulate a suitable ceremony for that occasion.

TEACHING OF PEDIATRICS.

Another field of endeavor which may with the greatest propriety be surveyed by this Association is that of the teaching of pediatrics. It would be pleasant and might even be profitable for us to recount the advantages we have enjoyed in our various institutions, and felicitate ourselves upon the notable improvements in pediatric lines which have occurred in recent years. Though less agreeable I think it will be more useful to consider some of the conditions which are not altogether satisfactory, but are by no means irremediable.

Notwithstanding that great advances have been made in the teaching of pediatrics, even within the memory of many here today, it cannot be denied, unless I am altogether wrong in my judgment of the state of affairs, that even in advanced institutions of learning conditions are not yet in an ideal state, while at the other end of the scale of medical colleges they are sadly in need of improvement to make them only tolerable. It should be understood that in the criticisms which I am about to make and in the work which will be suggested for this Association to undertake, there is meant to be nothing of unkindness, nothing of unfairness, nothing of hypercritical censoriousness, but a plain statement of facts and conditions as they are, in a sincere desire to bring them nearer to what they should be.

What, then, in general terms, are the present conditions? For one thing there is no uniformity of excellence, nor of standards of excellence in the matter of teaching, but the greatest inequality in this respect among the various schools. Is it necessary that there should be uniformity? There cannot be absolute uniformity nor is that necessary. But it seems to me a degree of uniformity is necessary and a standard is imperative. Pediatrics should not claim too much of the student's time and attention, and it should not tolerate too little. A few colleges have brought the department of pediatrics up to a high standard of completeness and efficiency, while there are others which have no department of pediatrics at all, and the remainder, by far the largest number of schools, occupy all the gradations between these extremes. The causes of these conditions are various. Quite frequently it is because faculties have not kept pace with the march of progress. Some do not realize nor appreciate the scope of modern pediatrics. In many colleges the time allotted to the subject is too short. In some the department of pediatrics is a mere appendage to some other chair which is perchance occupied by a teacher who cares little about it and gives it scant attention. Some teachers of pediatrics lose a part of their scanty time allowance by teaching general medicine in their pediatrics whereas the student should know his general medicine before he undertakes pediatrics. With inadequate time many teachers of pediatrics altogether omit taking up the anatomy and physiology of the developing period. These also the student should have had in his work upon anatomy and physiology, or else due time should be allowed to the department of pediatrics to prepare the student in these branches. Many schools now teach in the anatomical course the special anatomy of the nervous system, of the eye and ear, of gynecology and perhaps other special departments, but I venture to assert that few if any give in the anatomical department any special attention to the anatomy of infancy and childhood. The same may be said of the physiology and of the pathology of the child.

THE NEGLECT OF THE SURGICAL SIDE OF PEDIATRICS.

As to the surgery of infants and children—the whole field, large and important as it is, is the worst ignored, the most neglected in the department of pediatrics if not in the entire world of medicine today. Now I need not consume your time in presenting proof that surgical diseases of infants and children are as distinct in their peculiarities as are their medical diseases. It is equally true in surgical pediatrics as it is in medical, that some disorders are found at no other time of life, and also that there are others which although they occur in adults as well as in children, when they are found in the latter present different pathological phenomena, run a different course, require different treatment and arrive at a different result from what would be usual in the same disease in the adult. It is seen at a glance that a considerable group of affections, including the congenital malformations, the early evidences of hereditary syphilis, traumatic separation of epiphyses, croup and with it aeroporotomy in its varieties—intubation, laryngotomy, cricotomy, crico-tracheotomy, etc., rickets with its numerous deformities requiring surgical attention, eneuresis, cancrum oris and noma, as well as certain herniae and certain varieties of tumors, are found only in infancy and childhood. Another group, for example, intussusception, prolapse and polypus of the rectum, hip-joint disease, post-nasal adenoids, enlarged tonsils, foreign bodies in the nose and ear, and cervical adenitis, although not exclusively occurring in children, belong practically to the surgical diseases of children. A third group in which may be mentioned the fractures and dislocations and empyema, includes nearly the whole remaining list of surgical abnormalities which occur in adults as well as in children, and yet are sufficiently different when occurring in the young subject as to be worthy of special classification and study. And I have not yet mentioned the subjects of shock and hemorrhage, of anesthetics and antiseptics, of inflammation, degeneration, of the processes of repair and recuperation, of bandaging and dressing, of the use of medicine and diet in surgical cases, and many other topics which present peculiarities and which require study in a class by themselves. And yet how dimly do these facts seem to stand out in the minds not only of the profession generally, but of many who profess to have given special attention to the diseases of children. In 1896 I made some inquiries along this line among teachers of pediatrics. Replies were received to these questions from sixty-three colleges. To the question, "Does the teacher individually consider that pediatrics includes the surgical as well as the medical diseases of children?" forty replied in the affirmative, thirteen replied in the negative, while the remainder either left the question unanswered or answered indefinitely. So there was a very positive expression of opinion that surgery is well within the scope of pediatrics. But how is this conviction carried out in practice? Of the sixty-three colleges only twenty-six professed to teach surgical as well as medical pediatrics, thirty-seven acknowledging that they taught only the medical side of the subject. How complete the course on surgical subjects in the twenty-six colleges I did not venture to investigate. With the usual time allowance I do not see how it could be very thorough.

As to our text-books what do we find? How many of them cover both sides of the subjects? I have no criticism to offer because an author who is trained only as a physician presents only the medical side in his text-book. But why should he not indicate as much in the title he chooses? A few do so. "Medical Diseases of Infancy and Childhood" clearly defines the limitation. When you get back to your libraries read the title pages of your text-books and see how few have made the discrimination, or even alluded to the surgical side. And yet it is there all the time. I do not for a moment suppose there was any intention on the part of any author to minimize the scope of pediatrics nor to claim more in his title than was fulfilled in his text. It was doubtless merely an oversight and it shows how we overlook and neglect the surgical aspects of the subject.

LACK OF CLINICAL FACILITIES.

Clinical facilities are the greatest lack of many schools, and year after year the farce is enacted of "teaching" pediatrics by didactic lectures only, without demonstration upon the patient, without meeting disease face to face, without ever learning by actual experience the natural history of either normal or pathological conditions, or applying therapeutic means for their relief. In some schools there would be pediatric material enough if it were properly allotted, but it is kept in the departments of general medicine and surgery, and not used for teaching purposes by any one disposed or perhaps trained to study and demonstrate its peculiar features.

There should be perfect cooperation between teacher and clinician when the teacher himself has not entire control of the material. This cooperation we should be able to bring about or to further in this Association composed of teachers and hospital and dispensary clinicians.

In some cities there would be plenty of clinical material, but that it does not get into the hands of those who would utilize it for teaching purposes. It is seen only by practitioners who either do not appreciate its value to a teacher or investigator, or who do not take enough interest in the welfare of the profession to place the material where it would be utilized. In other instances good material for study and demonstration is absorbed by unqualified "dispensaries" and private "clinics" carried on for the private benefit of their owners or promoters.

The foregoing are but general statements. Yet I think they can be verified by close examination into the situation.

There are still other features needing discussion, adjustment and improvement—some of which will be suggested a little farther on.

SUGGESTS A COMMITTEE ON THE TEACHING OF PEDIATRICS.

I beg to suggest to you that a committee of five be appointed by the incoming President of this Association whose duty it shall be to secure detailed information as to the present status of the teaching of pediatrics in this country; to define its proper scope; to determine an ideal and also a minimum syllabus for the teaching of pediatrics in our medical colleges; to confer with The Association of American Medical Colleges, with the Council on Medical Education of the A. M. A., and with the Confederation of State Boards of Examination and Registration with a view to securing adequate place and time in college curricula, and to regulating the conditions of the clinical facilities and the equipment necessary for the proper teaching and study of children and their diseases.

The information gathered by this Committee on the Teaching of Pediatrics should not merely be taken from the announcements issued by the various colleges, but from the head of the department of pediatrics over his own signature, and should be such as he would be willing to have verified by a visit of the committee. They should also make use of all other reliable sources of information.

Their investigation should cover the following points, and probably others:

1. Has your college a chair or department of pediatrics?

2. Position in the faculty: Is the department independent, or subordinate to some other chair? Or is it one of several branches taught by the same professor?

3. Is pediatrics compulsory, that is, required for graduation after a separate examination.

4. Teaching staff: Of how many members does the staff of the pediatric department consist, and what are their titles and duties?

5. Time allowance: (a) How much time does the curriculum allow for pediatrics during the whole course (expressed in hours)? (b) What percentage is this of the whole time for the entire medical course?

6. Where placed in the course: In what year or parts of a year or years is pediatrics taught?

7. Division of time: How much of the time is devoted to didactic lectures?

How much to clinical lectures to the whole class?
How much to section teaching in hospital or "ward walks"?
How much to section teaching in dispensary?
How much to section teaching in homes of patients?
How much time to quizzes (in review of past work)?
How much to case-teaching (of recorded cases)?
How much to recitations (of an assigned lesson)?

8. Number of students: What is the usual number of students in the class, junior or senior, taking pediatrics?

9. How many students in a section?

10. What are the hospital facilities? Name hospitals. Number of children's beds in each. Number of cases per school year. Number of cases per member of the class. What are the dispensary or out-patient facilities? Number of cases

per school year. Number of cases per member of class. What are the facilities for teaching contagious diseases? Number of cases per member of class.

11. Is there any special laboratory of pediatrics?

12. Is there any museum of anatomic or pathologic pediatrics?

13. Is there any pediatric library for the use of students?

14. Are both medical and surgical pediatrics taught, or only medical?

15. Is surgical pediatrics taught by the chair of pediatrics or in the department of general surgery?

16. What topics are covered in the teaching of pediatrics?

The representative of the department who answers these questions should then state, opposite each answer, whether the present condition is up to his ideal in that particular respect, or what would, in his opinion, be an ideal condition. In another column he should state opposite to each answer what, in his opinion, is the least that should be required in a North American medical college of today, to constitute a respectable department of and equipment for a course in pediatrics.

Such a report made along the lines I have suggested, with such additions and modifications as would be found expedient as the work progressed, would establish a standard, would enable each school to take its own measure, each teacher to compare his work with that of his compeers, and to note the shortcomings, if any. If the teacher is inefficient and non-progressive in the improvement of his department, that fact will be brought to light, and steps can be taken which will result in a better presentation of the subject to future classes. If, on the other hand, a faculty has not been alive to the progress that has been going on and has turned a deaf ear to the requests of the teacher of pediatrics for adequate time or for a vote on the candidates for graduation, or for better clinical facilities or equipment, or for whatever is lacking and reasonably should be supplied to give his department due scope and authority and efficiency, his suit will be aided and if necessary could be successfully pressed by the aid of this Association. Few schools, if any, would be willing in this day, to incur the stigma of falling below a fair standard of excellence in an important special branch. The weaker schools would thus become better acquainted with the successful methods pursued by the stronger and be led to emulate them, and the stronger schools should be glad to lead the way and assist by their example and their influence to the end that greater uniformity should obtain and this upon a high plane of excellence.

Now I hope no one will misunderstand my statements. That no doctor and no newspaper representative will venture to assert that I have said that the diseases of children is a branch invariably badly taught in this country, or that there are no colleges which teach it excellently, or that there is disharmony in faculties or between teachers and clinicians concerning the subject. I have said nothing of the kind. I have said and do say that there is no college in which the ideal teaching of pediatrics has been reached; and that there are many where it is not well taught. I claim that this is a matter which can be remedied, and that this Association, if it does its duty, will remedy it.

APPEAL FOR UNITED EFFORT.

In order that there may be a united effort for a positive uplifting of this department in our medical schools, every teacher and every clinician should rally to our support. I hope that not even the strongest will feel so satisfied with their own advantages and so secure in their strength as to keep aloof and refuse sympathy and cooperation with those who are not so fortunate. And I hope that none whose hospital and college affairs are in an unsatisfactory state will fail to see that good may be brought about by a united effort, that by adding his strength to ours he can add our strength to his. The result will be a more thorough preparation of medical men, a better service to the public, and greater respect for the child's doctor in every community.

FRATERNITY.

I shall not consume your time in words of praise for the pleasures connected with fraternal meetings and greetings which are among the objects of this Association. We all feel those instincts for fellowship and friendship which are so wholesome, so helpful, and so valuable, so indispensable to normal men of similar pursuits, that if this organization had no other object whatever in view it would still have a right and a reason for its existence.

I hope that this plain statement of what appears to me to be a definition of the character of this Association, and these suggestions as to proper work for it to do will meet with your approval. If I have wrongly interpreted or expressed your wishes I shall hope to be set right, with a view that we may all together —every member acting in perfect accord with the body of the Association—perform the work that we have chosen to do.

I am very grateful to you for the honor of presiding over this Association.

TUBERCULOUS INFECTION THROUGH MILK.*

By E. C. Schroeder,

B. A. I. EXPERIMENT STATION, BETHESDA, MD.

We know today that conservative estimates place the percentage of tuberculous cows among those from which our larger Eastern cities derive their milk supply at from 20 to 25; that cows may be badly affected with tuberculosis and yet retain the appearance of health; that fully 50% of apparently healthy, tuberculous cows intermittently pass tubercle bacilli from their bodies per rectum with their feces; that cow feces are a common, almost constant impurity of ordinary commercial or market milk; that bacteria, irrespective of their specific gravity, rise as freely in milk with cream as they sink with sediment, and hence, that the presence of tubercle bacilli in milk means that they will be present in cream; that tubercle bacilli in cream are transferred to the butter made from it; that tubercle bacilli in the butter may live months without losing their pathogenic virulence, and that tubercle bacilli in milk are transferred to cheese and oleomargarin in the manufacture of which it is used. From these facts we may reasonably conclude that few human beings wholly escape exposure to tubercle bacilli from bovine sources. Indeed, it seems quite clear that, from the bovine source alone, a sufficient amount of tuberculous material is disseminated to account for the well-nigh universal infection of persons with tuberculosis implied by the autopsy figures of Nägeli, Schlenker, Burkhardt (a) and others.

---

*Read at the Second Annual Conference of the American Association of Medical Milk Commission, Chicago, June 1st, 1908.

That milk is often infected with tubercle bacilli is not only an inference drawn from the knowledge we have of the great frequency with which dairy cattle are affected with tuberculosis, and the facility with which we know tubercle bacilli expelled by tuberculous cattle find their way into milk, but it is also an experimentally demonstrated fact. For example, within the last twelve months about 350 samples of milk were obtained from 128 dealers and examined at Washington, D. C., and it was found that one sample out of every 18 contained tubercle bacilli and that one dealer out of something less than every 10 was intermittently selling tuberculous milk.

I do not believe that tuberculous cattle are the only, or even the most important source of human tuberculosis, and I do not care to be credited with the opinion that we must seek the entire solution of the tuberculosis question in the cow stable or in the milk pail. But, emphatically, I do believe that those investigators, who assert that bovine tuberculosis is an unimportant and practically negligible factor for public health, draw a very momentous conclusion from wholly inadequate premises.

The reasons given by those who deny the intertransmissibility of human and bovine tuberculosis may be summarized as follows:

1. Lack of direct evidence for the infection of persons with tubercle bacilli from bovine sources.

2. The resistance of cattle to infection with tubercle bacilli from human sources.

3. The infrequency of primary, intestinal tuberculosis.

4. The morphological difference between tubercle bacilli from human and bovine sources.

5. The difference in acid production by tubercle bacilli of human and bovine types under some conditions of artificial cultivation.

The time assigned for this paper is too short for more than a few words about each of these five reasons, but possibly even a few words may have some value.

FIRST REASON.

Evidence for the direct transmission of tuberculosis from cattle to persons is not wholly lacking. Dr. D. E. Salmon, formerly chief of the Federal Bureau of Animal Industry, published data regarding ten cases of tuberculosis among persons, four of which terminated fatally, due to accidental infection through the skin with tubercle bacilli from bovine sources. He further published nine instances in which circumstantial evidence of the strongest kind points, as conclusively as circumstantial evidence can, to the infection of persons with tuberculosis through drinking milk from tuberculous cows. The total number of persons infected was 24, and of these 16 died as the result of the infection (b).

The insidious character of tuberculosis; the long interval commonly between the moments of infection and diagnosis; the fact that the body may harbor latent tubercle bacilli for long periods of time, and the numerous ways in which persons are repeatedly and unknowingly exposed to tubercle bacilli, combine to make it difficult to trace tuberculous infection with absolute certainty, not only to a bovine source but, with rare exceptions, to a human or any definite source. Even with our more acute diseases, and with those for which the infection is invariably derived from persons, like typhoid fever for example, it is possible only in a small percentage of cases to trace infection clearly to its precise origin. Hence, though we could not point to numerous instances of persons who almost certainly contracted tuberculosis through infection with tubercle bacilli from bovine sources, this would have little real weight as evidence against the importance of tubercle bacilli from cattle for public health. Anyone who doubts this may find reasons to change his opinion if he will try to obtain absolute evidence as to the source of infection for a few ordinary cases of tuberculosis.

SECOND REASON.

Though it is true that cattle are often resistant to infection with tubercle bacilli from human sources, they are by no means immune for such bacilli. The literature on the subject presents many instances of the rapidly fatal, experimental infection of cattle with tubercle bacilli isolated from human tuberculous lesions. This proves either that the human subjects from whom the bacilli were obtained were infected with bovine tuberculosis or that cattle are susceptible to human tuberculosis.

The partial resistance of cattle for tubercle bacilli from human sources is associated with the logically implied condition that tubercle bacilli from bovine sources are almost constantly more virulent for all species of animals than those from human sources. This holds true when the respective virulence of tubercle bacilli from the two sources is tested by using the nearest available, zoological relatives of man, the quadrumana, as test animals.

The greater virulence of tubercle bacilli of bovine origin for all species of animals is a fact we cannot afford to undervalue.

Remember, tuberculosis of man is not a simple disease. Though the tubercle bacillus is its primary cause tuberculosis probably would be a comparatively rare disease if we could correct all unhygienic conditions like poor housing, insufficient fresh air, vicious, intemperate habits, etc., that favor the growth of tubercle bacilli within the body. This, together with the excellent results obtained by modern methods of treatment and the frequency with which tuberculosis is shown by autopsy examinations to be a self-healed or stationary disease, points strongly to the conclusion that, as a rule, man is safe against tuberculosis unless he is exposed to tubercle bacilli of unusual virulence or to conditions that make his body a favorable soil for the growth of tubercle bacilli.

THIRD REASON.

The infrequency of primary intestinal tuberculosis was used as an argument against the importance of bovine tuberculosis for public health because it was formerly believed that tubercle bacilli cannot penetrate through the intestinal mucosa without leaving evidences of their passage. It is quite clear that the danger from tubercle bacilli that reach persons concealed in food is very slight if intestinal tuberculosis is rare and the ingestion of tubercle bacilli cannot lead to the development of tuberculosis elsewhere without first affecting the intestinal canal. I do not believe that anyone can read the work published by Desoubry & Porcher (c), Baumbarten (d), Nicholas & Descos (e), Ravenel (f), Dobroklonski (g), Rabinowitsch (h), Vallée (i), Von Behring (j), Calmette & Guérin (k), Schloszmann & Engle (l, m), Vansteenberghe & Greysez (n), Petit (o), the United States Bureau of Animal Industry (p), the British Royal Commission on Tuberculosis and others too numerous to mention, without coming to the conclusion that tubercle bacilli easily pass through the intestinal wall without affecting it and cause disease in other parts of the body.

At the Experiment Station of the Federal Bureau of Animal Industry we produced pulmonary tuberculosis by inoculating hogs and calves into the tips of their tails, without intermediate lesions between the tail and the lung to connect the disease in the latter with the point at which the tubercle bacilli entered the body.

FOURTH REASON.

Tubercle bacilli isolated from bovine tuberculous lesions are commonly short and thick and stain evenly throughout their entire length, while tubercle bacilli from human lesions are commonly longer and thinner, and when stained have a more or less beaded appearance. Attention was called to this fact by Dr. Theobald Smith before Dr. Koch announced his view that human and bovine tuberculosis are not identical.

Mohler & Washburn (q), after a careful study of the susceptibility of tubercle bacilli to modification, draw the conclusion "that the morphology of tubercle bacilli is their most variable characteristic." These investigators successfully changed the morphology and also the virulence of tubercle bacilli; they found it possible both to reduce and increase the virulence of tubercle bacilli for different species of animals.

As examples of changes in morphology the following are instructive as well as interesting. A tubercle culture isolated from sputum was given a more perfect, so-called human morphological character than it originally possessed by passing it through cats. The same culture was given a perfect, so-called bovine morphological character by passing it through cattle. A culture isolated from a tuberculous boy was found to be morphologically a bovine type; after 15 generations on artificial media it was still bovine in character; by passage through cats it became, morphologically, a human type. A culture isolated from bovine tuberculous lesions was found to be morphologically a bovine type; it became morphologically a human type by growth on solidified human blood serum. It is not unreasonable to assume, if human blood serum can effect this change in a morphologically bovine tubercle bacillus from a bovine source, that the residence of tubercle bacilli from bovine sources in the human body may likewise cause a change from so-called bovine to so-called human morphology.

Mohler & Washburn are not the only investigators who have obtained results to prove that the tubercle bacillus may be made to vary both as to its morphology and virulence. In their work they give a history of investigations similar to their own, which strengthens the evidence for the conclusion that we can find nothing in the morphology of tubercle bacilli to encourage us to undervalue the importance of those from bovine sources for public health.

FIFTH REASON.

It was shown by Dr. Theobald Smith that tubercle cultures of the human type produce acid after growing for some time in certain culture media, and that this is not true of tubercle cultures of the bovine type. Relative to this test the British Royal Commission on Tuberculosis makes the following statement: "We have repeated these observations with great care and can confirm the general result. But we find that the development of acidity in the medium is so directly correlated with the amount of growth as to leave little doubt but that the reason why the acidity does not appear in the broth culture of bovine tuberculosis and does appear in the broth culture of human tuberculosis is simply because the growth of the bacillus is so much more luxuriant in the latter than in the former. We find moreover that the continuation of alkalinity is less marked in the more luxuriantly growing cultures than in the less luxuriantly growing cultures of bovine tuberculosis. So that the character loses its special significance; it is merely a striking indication of luxuriance of growth, and we cannot deduce from it more than we can from the luxuriance of growth itself (r)."

In an article by Theobald Smith and Herbert R. Brown (s), we find this statement: "It will be seen from the parallel cultures in glycerine bouillon in the following table that the culture of the human type tends first towards an alkaline, then towards a more acid condition, while the bovine type tends towards the alkaline reaction and the culture fluid either remains alkaline or else becomes feeble acid, according to the bouillon used."

In the table referred to one or more tests are presented of ten different tubercle cultures, which are classified as follows: 2 cultures of a bovine type from bovine sources, 3 cultures of a bovine type from human sources, 5 cultures of a human type from human sources. The table shows that the cultures of bovine type from human sources give the bovine reaction in some cases more perfectly than the bovine cultures from bovine sources. The word type as it is used here means I assume, morphological type, and we have already seen that morphology is a character in which the tubercle bacillus is so exceedingly variable that bovine types can easily be converted into human and human into bovine, quite independent of the sources from which the individual types were originally obtained.

Can we afford to use the acid test under these conditions as an argument against the significance of tubercle bacilli from bovine sources for public health?

Among the conclusions I draw from my present knowledge of tuberculosis of persons and cattle are the following:

1. After the enormous amount of work that has been done by investigators in both Europe and America, for which an enormous amount of material was available and was used, no satisfactory reasons have been found to conclude that there is a specific difference between the tubercle bacilli that affect man and those that affect cattle. It has, however, been proven over and over again that the bacilli from human and from bovine sources differ greatly in virulence and that those from bovine sources are almost constantly the more virulent.

2. As the morphology and virulence of tubercle bacilli can be greatly modified by cultural methods and by passage through animals, morphological, biological and biochemical tests are of doubtful value when employed to determine whether a tuberculous individual became affected from a human or from a bovine source.

3. Under existing conditions it seems imperatively necessary that milk should not be regarded as fit for certification unless it is obtained from cows of which we know that they are free from tuberculosis and that they are stabled, pastured and milked in an environment free from tuberculous infection.

4. All milk obtained from cows that are not certainly free from tuberculosis, or that are stabled, pastured or milked in a tuberculous environment, should be pasteurized before it is used as food.

5. As far as it is possible to do so, all milk intended for use as food, either in the form of milk or one of its products, should be obtained from certainly healthy cows in a certainly hygienic environment, or should be pasteurized or sterilized before it is used.

REFERENCES.

a. Zeitschrift für Hygiene etc., Vol 53, No. 1.

b. Bureau of Animal Industry, Bulletin No. 33, pp. 16 to 22.

c. Comp. Rend. Soc. de Biolo. XLVII., 1895.

d. Weiner Med. Wochens., Vol. 51, No. 44.

e. Jour. Phys. et de Path. Gén., Vol. IV, pp. 910-912.

f. Jour. Med. Res., Vol. X., pp. 460-462.

g. Arch. de Med. Exp. et d'Anat. Path. March 1, 1890.

h. Deut. Med. Wochens. Nov. 9, 1906. Arbeiten aus dem Path. Inst. zu Berlin, 1906.

i. Anna. de l'Insti. Pasteur, 1905.

j. Jour. Am. Med. Asso. Vol. 40, pp. 1178 & 1266. Vol. 41, p. 994.

Deut. Med. Wochens. Vol XXIX., No. 39.

k. Jour. Comp. Path. & Ther. Vol. XIX, Part 3.

l. Centralb f. Allge. Path. & Path. Anat. Vol. XVIII., No. 2.

m. Deut. Med. Wochens. No. 27, 1906.

n. Anna. de l'Inst. Pasteur, 1905.

o. La. Presse Médicale, No. 82, 1906.

p. Bureau of Animal Industry, Bulletins Nos. 86, 88 & 93.

q. Annual Report, Bureau of Animal Industry, 1906, pp. 113 to 163.

r. Second Interim Report, Part I, p. 27.

s. The Jour. Med. Research, Vol. XVI., No. 3, 1907.

THE PREVENTION OF FETAL INFECTION, EYES, MOUTH, UMBILICUS.*

By J. Clifton Edgar, M. D.,

New York.

I. THE MOUTH.

Because not so important as the eyes and the open vessels of the umbilical stump, the prevention of infection by careful cleansing of the mouth immediately upon the delivery of the head is often overlooked.

Cleansing of the infant's mouth at this time is especially called for after delayed or tedious labor and in instances of gonococcus vaginitis in the mother. In the former case by reason of the prolonged labor not only do the vaginal secretions undergo changes but an antepartum subaeration of the fetal blood, or asphyxia neonatorum, causes attempts at respiration on the part of the fetus within the birth canal, with a consequent aspiration of maternal secretions into its mouth and pharynx. Hence the importance of mouth cleansing.

It is my belief that there is no especial value in chemical antiseptics for this purpose, but our aim should be to mechanically remove the foreign substances as thoroughly and at the same time as gently as possible.

---

*Read before the Medical Society of the County of New York, April 27, 1908.

Roughness and carelessness in this connection only defeat our aims, by causing abrasions of the delicate buccal mucous membrane, and thus predisposing to subsequent infection.

Immediately upon the delivery of the head and even before the eye lids are cleansed, the lips and nose are wiped free from mucous and foreign substances, and then the small finger wrapped with a piece of gauze, or better, clean old linen dipped in a boric acid solution, or what is probably just as efficacious, plain boiled water is passed into the child's mouth and any accumulated mucous, blood or meconium removed by an outward sweep of the finger in each cheek.

It is constantly necessary to remind the students and pupil nurses in institution maternity work, that this little procedure must be carefully performed, so as to avoid causing any abrasions in the infant's mouth.

II. THE EYES.

Closely following, in sequence, the cleansing of the mouth and nose, should be that of the eye lids. Each eye lid of the infant should be carefully cleansed by means of a piece of old linen and sterile water or boric acid solution, and freed from all mucous, blood or meconium. A separate wipe should be employed for each eye and the lids gently washed from the nose outward.

It is evident that the last word has not yet been said concerning the much discussed subject of ophthalmia neonatorum, when one is brought face to face with the following statements and figures.

It can be readily shown that ophthalmia neonatorum produces from 7 per cent. to 10 per cent. of the existing blindness today. Only recently Mr. Simon Snell in a communication to the British Medical Association reported that of 333 inmates of the Sheffield School for the Blind, 136 or 42.36 per cent. had been blinded by ophthalmia neonatorum.

Among the children registered in the New York State School for the Blind during the past four years, 26 per cent. have their blindness assigned, by careful examiners, to ophthalmia neonatorum.

It is undoubtedly true that the midwife is largely responsible for these amazing figures, but the physician is not always blameless.

It is generally conceded that pyogenic microbes, other than the gonococcus, may produce ophthalmia neonatorum, but that the gonococcus is found as the cause of the infection in more than 60 per cent. of the cases.

The gonococcus readily re-infects wherever it finds a mucous membrane.

The fetus passes through the gonococcus infected vagina, with its eyes closed, and emerges with its face and body covered with the infecting material.

If now, at the birth of the head, and before the eyes are opened, the lids are carefully and gently cleansed from within outward with gauze or absorbent cotton moistened in sterile water, and a separate wipe is used for each eye, and if subsequently in greasing or washing the child's body, pyogenic germs are not conveyed from the body to the eyes, ophthalmia neonatorum is reduced to a very small percentage.

And if further, we supplement the above cleansing with a drop of a solution of one of the silver salts dropped on the cornea of each eye, immediately after the cleansing, the vitality of the gonococci that have escaped the cleansing, and found entrance between the lids, is destroyed and the chances of the eyes escaping infection are raised to the highest point.

Which silver salt we shall use and in what strength are still debatable questions. Varying percentages of silver nitrate, argyrol and protargol have their champions and opponents.

In the past few years I have done much clinical experimenting with the various percentages of the three silver salts named, and yet I still believe we have much to learn concerning their use.

During this time I have experimented in institution work and private practice with seven different silver salt solutions, namely: nitrate of silver, two per cent., one percent., and five per cent.; protargol five per cent.; argyrol ten per cent.; argyrol twenty per cent. and argyrol twenty-five per cent. This last solution I am at present using during my services at the Manhattan Maternity and the Emergency Hospital.

The scope of this paper will not permit of my citing clinical and laboratory experiments that I have made with the solutions of nitrate of silver. They will be found in the Transactions of the American Gynecological Society for 1907. My present belief is that in the end a solution of nitrate of silver of proper strength and correct application will but guard the baby's eyes from infection.

How few of those who condemn the silver nitrate solution as causing corneal hemorrhage and ulcers, and silver catarrh, conscientiously carry out Crede's original technique in the application of the solution.

Crede's original recommendation was that a single drop only of a two per cent. silver nitrate solution be instilled into each eye by means of a glass rod, and that especial care be taken to cause no traumatism to the conjunctiva. He also refers to the greater susceptibility of premature children to silver reaction.

III. THE UMBILICUS.

Partial or total neglect of aseptic precautions in the cutting and dressing of the umbilical cord is still of common occurrence, even today when the necessity of such aseptic precautions is generally recognized.

The death of infants early in their lives without assignable cause, should always make us suspect infection through the umbilical vessels, resulting in purulent thrombi of the intra-abdominal portions of the vessels.

How widespread is this danger may be gathered from the statement that in 1907, between 900 and 1000 midwives were in New York City present at the confinement of 43,834 mothers or about 50 per cent. (42 per cent.) of the total number of births.

A trained nurse who investigated the midwives of New York and reports her findings in a recent number of Charities and the Commons, describes an Italian midwife as follows: "Her home," she says "was the dirtiest, the condition of her hands was indescribable, her clothing was filthy and her (obstetric) bag beggared description." Concerning the obstetric bag the usual contents were rusty scissors, dirty string, a bit of cotton, a few sublimate tablets, old rags and papers, some ergot and vaseline, and a wired rubber catheter.

The protection of the infant from umbilical infection demands the following conditions:

1. That the cord be handled only with clean hands.

2. That sterile ligature and scissors be used in the ligation and cutting of the cord.

3. That the raw stump be immediately covered with a piece of sterile gauze and the infant wrapped in a sterile towel or at least in one freshly laundried until such time as the third stage of labor being completed, a permanent sterile umbilical dressing can be applied.

4. That a lubricant, and not a tub bath be used for the first cleansing of the child, and the removal of the vernix caseosa.

5. That subsequent cleansing of the infant be by sponging and not tubbing, until the umbilical ring wound be healed.

6. That a permanent aseptic umbilical dressing be applied at birth, which shall remain if possible, undisturbed, until the stump of the cord shall separate.

Such an apparently elaborate technique for the stump of the umbilical cord can in reality be so simplified as to be readily put into practical use in private practice and in institute work both in the hospital and in the tenement houses.

Perhaps I cannot better illustrate the simplicity and practicability of this method of technique than by describing our method in use at the Manhattan Maternity.

As used in the Tenement House Service of the Manhattan Maternity the umbilical dressings consist, 1. of a flannel abdominal binder thirty inches long by six inches wide, which is intended in the average case to surround the infant's abdomen, two and a half times; 2. a gauze dressing of four folds of gauze, three inches square, with the edges turned in and split from one edge to the center; 3. two small safety pins; 4. two pieces of narrow bobbin tape; 5. a small gauze wipe for the stump and 6. a pair of blunt-pointed scissors.

We are including at present for convenience sake in this sterile package a minim dropper for the application of the selected silver salt to the baby's eyes.

I show you here one of these packages pinned up and ready for use, and another open to reveal its contents.

In the preparation of the dressing the flannel binder is tightly rolled upon itself until about four inches from the end, the gauze dressing is pinned with the two safety pins, and around these pins the two lengths of bobbin are wound and the gauze wipe included. The whole is now rolled tightly and enclosed in a square piece of muslin as a protective. The packages are then sterilized by dry heat for forty minutes, later are reopened, the scissors and minim dropper added to the contents of the roll and then the entire package is again sterilized for thirty minutes.

For use at the bedside in the tenement house, upon the birth of the child, the muslin cover is loosened, leaving a sterile inside surface containing everything necessary for the ligation, cutting and permanent dressing of the cord, as well as a sterile minim dopper for the silver salt for the baby's eyes.

Our routine is to tie the cord with as little traumatism as possible, and after the baby has been greased with sterile lanoline and the vernix caseosa removed as thoroughly as possible, the stump of the umbilical cord is placed in the split gauze dressing and the latter folded carefully over the stump; the binder is then applied and held in place, by the two safety pins already mentioned.

I show you here this dressing and binder in place.

Unless the binder becomes soiled, it is left in place until the fifth day, and the mother is cautioned on no account to disturb it, and not to place the baby in a tub bath until permission is granted by the physician in charge of the case. We rarely find that these directions are disregarded and that the dressing is disturbed by the family of the infant.

If infection is suspected the stump can readily be inspected by the attending physician by raising the upper edge of the binder without removing the dressing.

In a series of 1,600 infants in this hospital, including 1,000 cases in the East side tenement houses and 600 in the hospital building, treated by this method, as far as known there has not been a single case of umbilical infection. Of these 1,600 cases the average time of separation of the umbilical stump was the sixth day.

CASE TEACHING IN PEDIATRICS.*

By W. W. Butterworth, M. D.,

ASSOCIATE PROFESSOR OF DISEASES OF CHILDREN, MEDICAL DEPARTMENT OF TULANE UNIVERSITY.

It seems fitting and profitable for an association of teachers to discuss teaching methods, and much good can follow an interchange of opinions and experiences, and with this purpose in view, I ask your attention to a method of case teaching, which has given very gratifying results in the pediatric department of Tulane University.

The idea is not a new one, for case teaching has been in use at Harvard for several years, first in the law department and later in the medical school, and I am indebted to my friend, Associate Prof. John Lovett Morse for calling my attention to its value in pediatric teaching.

Briefly stated, our method is as follows: A printed history of a case is given to each senior student; this printed sheet states the family and personal history, the features of the present illness, and result of examination of the little patient. The student is allowed one week in which to study the case, and for this purpose he makes free use of his text books and the College library, and discusses the case with his fellow students.

---

*Read at the Annual Meeting of the Association of American Teachers of the Diseases of Children, Chicago, Ill., June 1, 1908.

He is to weigh each statement, symptom, or finding in the history; carefully to consider the several probabilities in diagnosis and to eliminate these until he reaches a final conclusion, and to present his solution of the problem in writing, giving an intelligent discussion of the case.

These papers are graded and if found satisfactory exempt the student from a part of his final examinations.

After reviewing and grading the papers the case is now taken up either in class conference, or what is better, is made the subject of a didactic lecture, when important omissions in the history or examination of the case is noted; the relative value of each statement is considered; the stumbling blocks in the way of a correct differential diagnosis are cleared away, and owing to an aroused interest, the opportunity is present when the didactic lecture can be made impressive, and lasting in its effect.

This method possesses the quality of stimulating the student's interest in his work; a most important factor in the acquisition of knowledge. A problem is presented for solution, which of necessity demands purposeful reading, invites discussion, and compels thought and a careful analysis; the student, willy nilly, is compelled to read and think for himself. The written opinion commits him to a definite diagnosis, it is a crucial test of his reasoning powers, and diagnostic ability, and we often learn much from our mistakes.

Finally, this prepares the mind for further consideration of the subject, and the didactic lecture assumes a new importance, and conveys something more definite and enduring than mere abstract teaching can impart.

That it is a valuable addition to our teaching resources I am convinced, and by a judicious selection of cases, it is possible to cover the field of pediatrics in this manner.

It is a method independent of clinics and lends itself equally well to small or large classes of students.

It stimulates an interest in a subject, and helps the mind to grasp and retain knowledge.

The case is presented free from any distracting personality. It demands careful and painstaking consideration of facts, of relative values and therefore cultivates thoroughness and prevents mistakes arising from a hasty diagnosis.

It is a process in reasoning, pure and simple, and tends to develop the faculty of drawing logical deductions from given premises, a faculty so necessary to the good pediatrician, and when combined with keen observation places a man far in advance of his professional associates.

FEDERAL RECOGNITION OF THE WORK OF THE MEDICAL MILK COMMISSION.*

By John W. Kerr, M. D.,

ASSISTANT SURGEON-GENERAL, U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

It is a pleasure to present before this body a review of the activities and interests of the United States Public Health Service in the pure milk movement, especially as they relate to the work of the Medical Milk Commission.

During recent investigations into the origin and prevalence of typhoid fever in Washington and elsewhere by officers of the service, milk was shown to be an important factor in the transmission of the disease. At the same time it was shown that much of the milk sold was too old, too warm and dirty.

These facts emphasized anew the influence of milk in the propagation of infectious diseases and production of excessive morbidity. Milk is perhaps used more extensively in this than in any other country, and the production of a pure milk supply is of vital importance to the State.

It was determined, therefore, to make a comprehensive study of milk as it relates to the public health and render the results available to health officers and others interested in the preservation of life and health.

---

*Read at the Second Annual Conference of the American Association of Medical Milk Commissions, Chicago, Ill., June 1st, 1908.

As stated by the Surgeon-General, the object of the inquiry was to include in a published report all available data showing the influence of milk as a carrier of infection, its chemical composition, the contaminations found therein, their influence upon it as an article of food, and the measures necessary in its production and handling to prevent contamination.

These studies of necessity included consideration of the methods previously adopted by physicians and others to prevent the enormous losses of human life which are known to occur within the first year after birth—due principally to a lack of proper food.

All the data collected and results of laboratory investigations conducted thus far have been incorporated in bulletins entitled "Milk and its Relation to the Public Health" (a) and "The Thermal Death-Points of Bacteria in Milk." (b)

In the Bureau at Washington an index of public health literature is kept, and through this agency the work of the various milk commissions has been followed. In order to keep in closer touch with the movement and determine its influence in the promotion of the public health, officers of the Service were detailed by the Surgeon-General to attend the Conference of Medical Milk Commissions held in Atlantic City June 3, 1907. The importance of that meeting and its influence on the production of pure milk for clinical purposes, was fully appreciated.

Since that time it has been my privilege to inspect a number of dairies throughout the country producing "certified milk," and these visits brought me in contact with the physicians responsible for the continuation of this movement.

Many interesting and valuable points were obtained respecting the scope of the movement, the methods and standards adopted and the results thus far accomplished. It is a pleasure to acknowledge again the courtesies received during these visits. It is desired also to commend the professional bodies under whose patronage the dairies operate, as their continued interest alone renders "certified milk" possible. The information obtained was compiled and included in bulletin 41 with the view to stimulating the interest of health officials and others as to the importance of pure milk for the use of infants and invalids, and to set forth the essentials necessary to its production.

(a) P. H. & M. H. S. Bull. Hy. Lab. No. 41.

(b) P. H. & M. H. S. Bull. Hy. Lab. No. 42.

In presenting this important phase of the subject it was intended only as an impartial outline of the movement, for the guidance of others. Careful study, however, unavoidably results in the formation of definite opinions, and it is desired to refer to certain of these, although done not without some diffidence.

MOTIVES SHOULD BE UNDERSTOOD BY PUBLIC.

Emphasis was laid on the fact that the plan for preservation of "certified milk" was originally formulated by a physician, and that it contemplates the sanitary supervision of dairies by a commission appointed by the local medical society. This should be sufficient evidence that the work on the part of the medical profession is purely philanthropic, and in order to secure the best results its character should be so continued. The most important function of the medical milk commission is undoubtedly educational; and, as an official, it appears to me highly important that the chief sanitary officer of the locality be a member *ex officio* and identified with the movement. Such an arrangement would appear to be of mutual advantage, as the commission would be in a position to act in an advisory capacity with respect to the general milk supply, and in return be provided with laboratory facilities and receive protection of the health office against the illicit use of its certificates. Moreover, such relationship would result in the adoption of better ordinances which when once issued would in all probability be continued, thus permanently improving the market milk and relieving the commission of the necessity of assuming direct responsibility for more than one grade of milk.

MEANING OF THE TERM "CERTIFIED MILK" SHOULD BE PRESERVED.

While it has seemed wise to indorse different grades of milk and even cream, it appears to me that the original purposes of the commission would be better subserved by certifying to only one grade, and that as pure as can be produced. "Certified milk," even then, varies in purity depending upon the vigilance of the commission and the intelligence of the dairyman, as investigations will show. There should be no confusion as to the objects to be attained, and these appear to me to be the production of as nearly a perfect milk as possible, primarily for the use of infants and invalids, the establishment of correct clinical standards of purity for cow's milk, and the creation of a demand, through education of the public, for milk approaching such standards. While there may be great opportunity to improve and increase the amount of "inspected milk," by certifying to its character, there is danger of the motive's being questioned. It is the function of the municipal sanitary authority to assume responsibility regarding all other grades of market milk except certified and he should be encouraged in this respect.

In a conference called to devise measures for the improvement of the milk supply of Washington, there was adopted the classification,—certified milk, inspected milk, and pasteurized milk. The first grade was to conform in all essential particulars to the standards in use by this association, and was to be certified by the Health Officer. The classification appears to me to be excellent, and its recognition in law, or regulation issued in accordance with law, would insure protection of the term "certified milk" in the District of Columbia.

TERM "CERTIFIED MILK" SHOULD BE PROTECTED.

The value of the term "certified milk," as originally applied, depends upon the zeal of the professional body authorizing its use, and the educational influence it has had in creating a demand for pure milk. It should therefore be applied only to milk produced under the auspices of a medical milk commission, or possibly health officer clothed with authority to insure compliance with all the requirements demanded by medical commissions.

Unscrupulous use of the term and its prostitution for pecuniary purposes should be prohibited. This is necessary both in the interest of the public health and the pure milk movement.

The laws of New York and Kentucky now forbid its unwarranted use, and similar action should be taken by other States and Territories. In the campaign for pure milk every agency is necessary, and above all the medical profession. It is highly important therefore that its efforts should be protected, and it is suggested that this body frame resolutions to this effect, for adoption by the American Medical Association, American Public Health Association and similar organizations interested in the public welfare. People should be taught the dangers of impure milk and the measures that may be taken to insure its wholesomeness. Agitation necessary to secure legislation for the protection of the term "certified milk" would in itself be an important factor in promoting the pure milk movement. Schools, hospitals and dispensaries suggest themselves as additional agencies through which might be disseminated such information.

USE OF CERTIFIED MILK IN INFANTS' MILK DEPOTS.

With the view to determining the character of milk used and other data relating to infants' milk depots, in the United States, an inquiry was sent by the Bureau to health officials of all cities containing a population of over 50,000. The information received was tabulated and shows that in 6 of the 21 cities having such depots "certified milk" was used exclusively.

Measures for the production of pure milk and the prevention of infant mortality go hand in hand, and the profession should view with pride the fact that both of these movements in the United States were inaugurated by physicians. "Certified Milk," as is well known, was inaugurated by Dr. Coit, and the first infants' milk depot in the United States was established, to the best of my knowledge, by Dr. Henry Koplik, of New York.

Reference to Dr. Koplik's initial work is cheerfully made, inasmuch as it has not received the recognition that it deserves.

It is suggested that in future these two public health measures might with advantage be more closely identified, and that such affiliation would further the educational influence of both. The improvement of sanitation depends more than anything else upon education, and it is an agency peculiarly adaptable to the use of the Public Health Service and Associations of this character interested in the public good.

SOME OBSERVATIONS OF THE JUVENILE DELINQUENT FROM A MEDICAL STANDPOINT.*

By William G. Eynon, M. D.,

VISITING PHYSICIAN HOUSE OF REFUGE, NEW YORK.

There shall be no attempt made in this paper to add a contribution to the scientific study of these children from a statistical or critical standpoint; but rather to present to you briefly, a few observations that might be of interest, which have been made during a more or less intimate association with this class of boys, while acting as attending physician to the New York House of Refuge. As a matter of convenience, let us divide our subject roughly into three sections.

(1) Mental Defects.

(2) Physical Defects.

(3) Defects not arising directly from either mental or physical abnormalities.

A number of these children show some mental defect, more show physical defects, while few would be absolutely free of both if subjected to a rigid test.

It may be stated as a general truth that the juvenile delinquent is mentally inferior to the average boy of the same age, other considerations being equal, on the other hand the actual number of feeble-minded cases among them is not large, being in my experience not more than one in 500. I believe that this mental inferiority is more apparent than real; in the majority of cases the trouble is not congenital but acquired, the development of the intellect having been stunted by lack of training and by vicious habits of thought and action. To enter deeply into a consideration of the mental status of these boys would open up a field of psychological research far beyond the scope of this paper.

---

*Read before the Medical Society of the Borough of the Bronx, May 13, 1908.

It has been noticed that the inmates of the House of Refuge do much better work in school after they have been in the institution for a time, showing a mental and moral improvement resulting from a better environment. It has also been noticed that they do much better work in their studies when they are actively employed in regular shop or industrial work, showing pretty conclusively that idleness is detrimental to a boy's mental progress, and technical work systematically employed acts as a mental stimulus. It may be said further in regard to school work that what is apparently well learned is often soon forgotten, this is probably due not so much to defective memory as to the absence of any desire to remember what they have studied. It may be gathered from these facts that these boys are not mentally ambitious, they much prefer to be placed in the lower classes that their work may be easy. It must not be inferred that they are not clever, they are very apt at many things, some show a great deal of skill in their industrial and shop work and others exhibit more than the average artistic ability in the ornamental art classes.

An analysis of their mental equipment, in my opinion, would show in nearly every instance a lack of some quality necessary to the successful pursuit of any serious vocation in life. I do not say however that that lack is necessarily a permanent one.

The consideration of physical defects opens up a much more tangible field of investigation from the physician's view point, especially since there has been a tendency lately among some scientific observers to attribute a great deal of mental and moral deficiency and perversity to physical abnormalities. Let us see what the facts are. It may be stated at the outset that the inmates of the New York House of Refuge compare very favorably physically with the average boy of the same age. I have arrived at this conclusion after having examined over 5,000 of these children on their admission to the institution and at other times, in addition to this I have been able to test their susceptibility to contagion, and to determine their resistance to diseases such as typhoid fever, pneumonia and other infectious troubles, in many cases.

The following table was compiled from a recent examination of 650 inmates and may be taken as a fair estimate of the general percentage of physical abnormalities:

Tubercular parentage	56
Insane parentage	7
Criminal parentage	30 (less than 5%)
Adenoids	5
Adenoids and tonsils	9
Hypertrophied tonsils	85
Phimosis	9
Hernia	9
Varicocele	20
Epilepsy	1
Epispadias	4
Deflected nasal septum	10
Bifurcation of uvula	1
Undescended testicle	3
External hemorrhoids	4
Internal hemorrhoids	1
Relaxed cremaster muscle (scrotum)	13
Hydrocele of spermatic cord	1
Leucoderma	3
Seborrhoea capitis	1
Asymmetry of the thorax	1
Psoriasis	2
Cyst of glans penis	1
Alopecia	1
Flat foot	1
Tuberculosis of knee joint	1
Tubercular glands	3
Hip joint disease	1

Scabies	1
Chicken breast	2
Chronic eczema	1
Hypertrophy of mammary gland (female type)	1
Positive sexual perversion	3
Suspected sexual perversion	25
Trachoma	28
Defective vision requiring correction	150

The dentist informs me that these boys are not subject to any marked adnormalities of the oral cavity, dental caries and irregular eruption of the teeth occurring about as often as in the average. In anaylzing the above table it must be remembered that these children were all between the ages of 10 and 20 years, this fact probably accounts for the small percentage of adenoid cases when compared with the hypertrophied tonsils. The latter 85 out of 650 is not too large, I think, for children in this climate. The sexual perversion referred to is the practice of pederasty, the diagnosis was made by an examination of the anus, relaxation and dilation of the sphincter and irritation of the mucus membrane have been found to be pretty reliable evidence. Sexual irregularities have always been and always will be prevalent among boys of this class, especially when confined in institutions. They are best overcome by the correction of phimosis if present, and by careful watching and persistent instruction. At the House of Refuge I believe that these methods have been successful in improving conditions, and there has apparently been established a better spirit among the boys in reference to these unnatural and vicious practices. Varicocele and relaxation of the scrotum are unusually prevalent for reasons unknown to the writer. The five cases of local tuberculosis do not represent, in my opinion, the average percentage, it is too low. Hereditary tubercular taints are more frequently found than in the average boy. On the other hand, hereditary syphilis, rachitis, epilepsy and cretinism, are not at all commonly met with. Want of facial symmetry, abnormalities in the size and shape of the ears and other signs of degeneracy and atavism are found in fully 20% of these boys as might be expected when we consider the personal and family histories. Any detailed description of these indications would require a paper devoted to that subject alone.

What part does physical deformity and disease play in the causation of moral delinquency? In my experience little or none. Only 25 cases of adenoid growths, and but two or three of those pronounced mouth breathers discredits that disease as a causative agent. Congenital deformities, inherited tuberculosis, signs of degeneracy and the like, indicate a vicious and vitiated ancestry, but there is no evidence that these abnormalities per se have anything to do with the boy's wayward tendencies.

Lombroso says that all criminals are morally insane, which is probably true of the adult type, even then I believe that the condition is often acquired, and in the case of the juvenile offender there is a small percentage of congenital moral idiocy.

Given a boy of indifferent or bad heredity, allow him to run wild during his early years, let him have neither training or discipline except such as he learns from the truant officer and policeman, and you have a boy who will sooner or later acquire an intimate acquaintance with the inside of a reformatory. On the other hand, the influence of environment is so great that a new born baby of equally bad ancestry placed in the country to be reared in the home of a highly respected family, having practical ideas of morality, will stand a very good chance of becoming a reputable citizen. The product of the former hypothesis is a fair sample of what we have to deal with at the House of Refuge.

Such a boy has an exaggerated ego, he is vain, has a very high idea of his own importance and is quite above the observance of any rules. One of his strongest traits of character is revenge. He will "get hunk," to use his own expression at all hazards. I have repeatedly ministered to stab wounds as a result of insults, real or fancied, which have been received long before and after a normal person would have forgotten them. Most of you will recall the case of the young man, one of our graduates, who recently returned from a term at Elmira and shot his mother because she had sent him to various institutions as an incorrigible.

The mental vagaries of this class of boys are past finding out, and many words in their vocabulary are quite unintelligible to the outsider. They form a strange and very intimate friendship for some particular boy generally smaller than themselves, and guard this boy jealously. There is often a perverted sexual relationship concealed in these friendships. The other day I noticed a colored boy in the hospital with a string of beads and scapula about his neck. I remarked that it was unusual to see those on a negro and was informed that he wore them because his "rakes" (i. e., his special boy friend) was a Catholic.

The practice of self mutilation is hard to explain. It is not uncommon and often occurs when a boy is undergoing discipline for some offence, and is not always, if often, bred of a desire to get into the hospital; I am inclined to attribute it to a state of mental excitement in which there is an inordinate desire for sympathy, also a desire to pose as a martyr and appear heroic. Underneath it all there is a good deal of bad temper. They often take a piece of glass or sharp nail and cut their initials through the skin, an extremely painful procedure. When you ask them why they did it, they usually say "For fun," which is obviously far from the true reason, as a matter of fact almost any question will put most of these boys immediately on the defensive and the chances are that you get very little truth in the first answer. This is usually the case with new boys; after they have been in the institution for a time we are often able to gain more of their confidence.

In a few of these lads, and they are the worst with which we have to deal, there is a periodicity in their bad behavior which seems to move in cycles; they will go on for a time models of goodness, when suddenly some little thing upsets them and they become fiends incarnate, resembling the condition called "La Folie Circulaire." One boy told me that he had devils inside which lay quiet for quite long periods, but when they were aroused he was no longer responsible for what he did. Most, if not all of this type are hereditary degenerates who make occasional serious attempts at reform, but in whom the criminal tendencies are too strong to be held in check for a very long time.

It is an old saying that a thief never repents, on the other hand persons who commit crimes as the result of passionate impulses are the easiest to reform. More juvenile delinquents belong to the former class than to the latter.

In attempting to reform these boys one is confronted with many serious problems, the purely mental and physical ones are the easiest. Such physical diseases or abnormalities as are amenable to medical or surgical treatment should be corrected. Careful examinations should be made and congenital phimosis remedied, adenoid vegetations removed, and any depression of the skull from old injury should be relieved if there are any signs of brain irritation. Vicious personal habits must be overcome as far as possible. This is not so difficult in the use of tobacco and alcohol while in the institution, but sexual vices are much harder to control, requiring unlimited instruction and eternal vigilance.

In the entire animal kingdom the civilized human species is the poorest bred; we carefully breed our horses and other cattle, while the uncivilized races derive some benefit in their natural state from the law of the survival of the fittest. Among the most civilized peoples no attempt whatever is made to influence the propagation of the race by selection, as a result the criminal and other undesirable elements of society increase more rapidly than the higher classes.

The first step in the right direction has been taken in the State of Indiana where sterilization of a certain class of criminals has been legalized by the legislature. This should be the entering wedge, the beginning of a movement in this country which will render it impossible for the habitual criminal, insane person, epileptic or degenerate to leave a legacy of more of his kind to the succeeding generation.

About 65% of our children are either foreign born or of foreign born parentage. There is room for improvement in our emigration laws—more stringency would render the question of the juvenile delinquent a little less perplexing.

Children born in the overcrowded districts of our great cities are seriously handicapped by the conditions under which they are reared. Radical measures should be taken to clean out these over congested sections, which are a menace to the health and morals of the communities in which they are situated.

Any reform or training school for these children in order to be successful must furnish as far as possible the influences that the child has hitherto lacked, this entails a study of each individual case and an intelligent classification. Segregation is pernicious. Most of the parents will tell you that their boy's downfall was due to bad company, to allow them to mingle indiscriminately with hundreds of others in a reformatory is obviously bad practice, such a boy's character would be apt to show a composite picture of all the vices of his associates. Under the prevailing system, the amount of good accomplished aside from ridding society for a time of an undesirable element, is problematical. To say that 10, 20 or even 50% turn out to be useful members of society, does not mean very much unless we knew how many would have reformed if they had not been sent to the reform school. The ideal institution for the reformation of these children should be located on a farm large enough to allow the inmates to be divided into small classes well separated, with officers trained to study the needs of each boy entrusted to their care, and sufficient in number to keep them under constant surveillance. Plenty of work for both mind and body should be provided, preferably such work and study as may be of use in later years. Out door play should be encouraged, and the diet carefully supervised and overindulgence in food, particularly of the nitrogenous variety should be avoided.

Sermons and lectures upon abstract morality are next to useless. Habit is the guiding factor in these children's lives. Compel them to choose the right course on every occasion no matter how trivial, and if you are dealing with a fairly normal child instead of a hopeless degenerate, you will have done something toward establishing the habit of right thinking and living which will influence their entire future career.

REPORT OF THE COMMITTEE ON CHEMICAL STANDARDS.*

(AMERICAN ASSOCIATION OF MEDICAL MILK COMMISSIONS.)

It has appeared to the Committee that, since the chemist's work, unless it is carefully restricted, must necessarily be more laborious and time-consuming than that of the bacteriologist of milk commissions, it is very desirable to limit the work required of the chemist as much as possible, in order that he may not be obliged to charge a fee so high as to increase the difficulties of the producer; and also, a certain amount of the chemical work that is very desirable with ordinary market milks is unnecessary with certified milks, because the bacteriological examination serves the same purpose. It is, for example, unnecessary to do any chemical work that would demonstrate changes due to an excessive number of bacteria; and it is also unnecessary to study the sediment, which often ordinarily falls to a chemist, because the bacteriologist does this. The recommendations that we would make are as follows:

A standard of fat and protein is necessary in pediatric work, and if milks are called four per cent. the fat should range within 3.5 to 4.5 per cent. Any milk falling within these limits should be passed. With so-called five per cent. milks, the standard should range between 4.5 and 5.5 per cent. With protein, the standard should range from three to four per cent. It is unnecessary and fruitless to have a standard for milk sugar.

---

*Read at the Second Annual Conference of the American Association of Medical Commissions, Chicago, Ill., June 1, 1908.

The fats may be determined by an ordinary centrifugal method that is known to be reliable, such as the Babcock Method. We would, however, recommend that the chemist, in case he is obliged to condemn a milk for falling outside of the limits, should have determined by control ether-extractions that his apparatus and his technique are actually reliable.

The protein should be done by the Kjeldahl Method, using the Gunning or some other reliable modification, and employing the factor 6.25 in reckoning the protein from the nitrogen. We would, however, recommend that, in order to reduce the chemist's labor, protein be not regularly estimated, but done only when some special consideration seems to the commission to make it desirable—in which case the chemist shall receive a special fee for this work. This recommendation is based upon the fact that, in spite of their best efforts, producers cannot keep their milks within a narrower range than the one recommended as a standard; but when this standard is adopted, only dishonest tampering with the milk will make it fall more than a minute fraction outside these limits.

In addition to the regular estimation of the fats, certain preservatives should be looked for. Formaldehyde is the one of chief importance at present. It may be tested for by the ordinary sulphuric acid—ferric chloride test; but if an apparently positive result is obtained, the specimen should be distilled, and the distillate tested. It is desirable that borax and boracic acid be regularly looked for, also by the turmeric test since this is very simple, and that occasional tests be made for salicylate acid and benzoic acid and benzoates. We would recommend that these preservatives other than formaldehyde and boric acid be looked for at least four times in the course of a year, at intervals entirely unknown to the producer; but that they be not regularly examined for.

In addition to what we have mentioned several points need consideration. As to the heat-test, we would recommend that this be required; it does not demonstrate temperatures such as are ordinarily used in the pasteurization of milk, but it is easily carried out and does show whether the milk has been subjected to higher temperatures, and will at least show that these more harmful temperatures have not been used.

An acidity-test is of no particular value in connection with certified milks, except that it would indicate to some extent whether the producer had surreptitiously added acid or alkaline preservatives to the milk; and this can be better done by other methods. As a method of determination of the bacterial condition of the milk, it is practically valueless in connection with certified milks; because these are carefully watched bacteriologically, and we have never known a milk to be condemned upon the acidity-test unless it had already been condemned upon the bacteriological. If an acidity-test is carried out, there should be a limit of 0.18 per cent., calculated as lactic acid.

The remaining point of importance is the question as to the determination of the specific gravity. This is comparatively a simple thing to do, and does not take much time; but to do it with sufficient accuracy to make it valuable is not wholly a simple matter. It should be carried out with a careful consideration of temperature etc., if done at all. With certified milks especially it is a matter of comparatively little consequence; because, other things that we have mentioned being properly controlled, milks of this quality practically never fail on the basis of their specific gravity. However, it may occasionally help to indicate grossly dishonest methods of sophistication and though of little importance and though because of its great variability under normal conditions it is a very rough guide, it is desirable to carry it out as a preliminary measure. Milks should however not be condemned solely on the basis of variations in their specific gravity and hence absolute standards are unnecessary and it should be used only to point out to the chemist in a preliminary way the possible gross deficiencies in the milk. Respectfully submitted,

David L. Edsall, M. D.,
Chairman.
L. L. Van Slyke, M. D.,
Henry Dwight Chapin, M. D.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

Stated Meeting Held May 14, 1908.

DR. GODFREY R. PISEK IN THE CHAIR.

AMAUROTIC FAMILY IDIOCY.—Dr. Goldstein reported two cases of this affection.

Case I. A female child twenty-two months of age. The family history showed no syphilis, tuberculosis, functional or organic disease. This was the second child, the first dying when eighteen months of age. This child when five months of age had played and taken notice of things. She then ceased to play, became constipated and nodded her head constantly. The anterior fontenelle closed. The ophthalmoscope revealed the characteristic appearance of white optic disc with cherry red centre. The lungs and heart were normal, the abdomen negative, the extremities spastic and the reflexes exaggerated.

Case II. This was a male child twelve months of age. He was a first child and gave practically the same history as the first case. He had had no infectious disease and up to the age of four months seemed to be a normal child. Since that time he had gradually grown weaker. The symptoms and findings were characteristic of the condition and the case resembled the first except that the child had lost more flesh.

Dr. Godfrey R. Pisek said that he had seen the same case in his clinic and had given a very unfavorable prognosis. Mothers are often unaware that these children do not see and unless a careful examination of the fundus of the eye is made the condition may be overlooked.

Dr. Goldstein said that he had another case which he had hoped to present. This child was very stout and there was no atrophy of the optic disc.

HYSTERIA GRAVIS IN A GIRL OF NINE YEARS.—Dr. Sara Welt-Kakels presented J. S., nine years of age, who had come to this country from Russia about eleven months ago. She had been brought to the Mount Sinai Dispensary early in April. The family history was negative, the parents being healthy Russian Jews. There were two other children who were well; one child had died of dysentery, and another had been born prematurely and lived only two days. This child had been asphyxiated for a time after birth. She had been breast fed, had had the measles and a severe attack of dysentery, but otherwise she had been healthy. In October, 1907, she complained of weakness of the legs, dyspnoea and palpitation. At times her eyes rolled up, she screamed and shook violently. These attacks were followed by no stupor or drowsiness. At first they occurred three or four times a week, but lately they had been much more frequent. She could no longer go to school, complained of headaches, constipation and loss of appetite. Although she had been under the care of various physicians she had steadily grown worse. At present she was pale, fairly well nourished, weighed 53 pounds. The mucous membranes were pale, submaxillary, anterior, posterior cervical and superficial lymphatic glands somewhat enlarged and she had grimaces involving the frontalis and some muscles of the nose. The pupils and fundus were normal and there was no change in sensation. The abdominal and epigastric reflexes were lively; the thorax was rather long and narrow and the movements of the thoracic walls during inspiration rather subnormal. The changes in the abdominal contour during inspiration were unique; with each inspiration the abdominal contents were pushed out like a balloon. Palpation and percussion showed nothing abnormal. Paralysis of the abdominal muscles suggested itself but electric reaction proved them to be normal, and examination with the fluoroscope showed normal excursions of the diaphragm. There was also associated with the protrusion of the walls of the abdomen a lateral rotation to the left. Dr. Welt-Kakels called attention to the article of Dr. Thomas of Boston on "Hysteria in Childhood," in which he specially mentioned the fact that in 19 cases out of 29 there was no disturbance in sensation and that the smaller stigmata were often absent in these cases. This made the diagnosis of hysteria in children very difficult, and it might become necessary to observe the course of the symptoms. A temporary complete disappearance of the symptoms would be of aid in making a diagnosis. The prognosis of this affection was better in children than in adults, owing to the fact that they were more credulous and more susceptible to suggestion. The two methods of treatment suggested were, first, that of intentional neglect, and second, that of surprise, the object being to remove the loss of control. Electricity and hydrotherapy had been used; both probably acted by suggestion.

A MONSTROSITY.—Dr. Herman B. Sheffield presented this picture which showed a fetus in which the anus, rectum, bladder, scrotum and one kidney were entirely wanting. The photograph had been taken of the baby born at full term and taken with instruments. There was no history of monstrosities in the family. The child lived about six minutes.

A CASE OF INFANTILISM.—Dr. Charles Hermann presented this case as an illustration of the paper to be read by Dr. Schwarz. He had had the case under observation for about a year. The patient was a girl ten years of age, whose parents were healthy. They had eight children, six living and all normal excepting this girl. She began to walk and talk a few words when three years old. When two years old she had measles. When six years old she weighed 26½ pounds. The striking thing about her was that she was very well proportioned, only miniature. There was nothing characteristic in the skin, no enlargement of the tongue, subnormal temperature or unbilical hernia. The child was placed on thyroid treatment and began to grow. In two months she increased 2cm. in height. In December she had increased 4cm. in height. The treatment was then discontinued until June, 1907, when she was seven years of age. She could then count 2 and 2. The metacarpal bones showed only two centers of ossification. The child was a subject of myxodema. She was placed on thyroid treatment and in June, 1907, she measured 99 cm. At present she was in the fourth class and able to add 5, 6 and 4.

Dr. Hermann said that he had reported a case of infantilism in a boy 16½ years old, who weighed 71 pounds and measured four feet. He presented none of the signs of puberty. He had been anaemic since birth and was always pale and short of breath. He had a systolic murmur which was probably not organic, and there was an accentuation of the pulmonic sound. A tentative diagnosis was made of congenital small arteries.

SOME GENERAL CHANGES FOLLOWING SCARLET FEVER AND MEASLES.—Dr. Max G. Schlapp reported three cases, two following measles, and one following scarlet fever.

CASE I. A boy of eight years, who lived in Schenectady and amid good surroundings. He was the first child. The labor was difficult. The mother had had two miscarriages and two births since. The child was bottle-fed. There were no symptoms of syphilis in mother, father or child. When one year of age he had an attack of measles which began with convulsions. He went into a state of unconsciousness and delirium, remaining so for five days. After coming out of his unconscious condition his convulsions continued for three weeks and averaged about fifteen a day. He continued to have convulsions at rare intervals for three months. After this he occasionally had a convulsion. He did not complain of headache, vomiting or any of the symptoms of cranial disturbance. During the last two years the convulsions had become more frequent and more severe. They were typical epileptic convulsions, developing first in the left hand, leg and face. The weakness in the hand increased so that the hand was partly paralyzed. His leg and the muscles of the face were also weak. He thought an operation would relieve the condition.

Dr. McCosh operated, exposing the anterior and central convolutions. He found the cortex discolored; the areas were hard and felt firm.

Case II. This was also a boy of 16 years, living in the city. He came to the hospital because of Jacksonian convulsions and weak mental condition. There was nothing in the family history. The child had been born with great difficulty, had had slight rickets, and when one and one-half years old had had measles. He had attacks of unconsciousness and twitchings of the left side. His left hand was paralyzed. At the age of two years he appeared to have recovered completely, but at the age of two and one-half years the attacks began again. They occurred once in from two to six weeks and gradually increased in duration up to the eighth year. Operation was deemed advisable because of the involvement of the hand, and the spastic condition and history of complete paralysis. Dr. McCosh again operated and again found evidences of that hardened area.

Case III. A boy of eight years who was brought to the hospital in an unconscious condition. He had had scarlet fever when three years old. During the acute attack he had had convulsions and was unconscious and delirious for five days. After this, convulsions continued with severity for two weeks. He had then had about one convulsion in four to six months. His family history was clear. He was brought to the hospital on March 10th and died on the 16th without regaining consciousness. At the autopsy a hematoma was found pressing upon the brain. He had evidently fallen during one of his attacks and struck his head.

The chief interest in these cases was in the pathological findings. In the first there were not three normal nerve cells; here was gliosis, an increase in the number of fibers and accompanying destruction of the nerve cells. In the second there was unquestionably a cyst and also some gliosis. This patient recovered slightly. In the third case one hemisphere was smaller than the other and at the base of the temporal lobe a small nodule was found. Photographs were presented showing the erasure of the fissure. In this case there was an inflammatory process. There could have been a toxic process involving the brain but he thought these cases were due to an encephalitis, the result of scarlet fever and measles. There was no question about there having been gliosis. Such a condition could not exist in a normal brain. The same condition might result from trauma clinically. Such cases were known as post traumatic dementia.

Dr. Sara Welt-Kakels said that three years ago she had reported three cases of deranged mental condition following acute infectious disease. The first case was a boy of five years in the defervescing stage of scarlet fever. He had delusions of sight and was delirious. The second case was a boy of ten years, who had had a diphtheritic sore throat. This patient became restless and finally maniacal. He recovered after three months. The third case was a girl of ten years who was recovering from an attack of diphtheria. She became depressed and melancholic and finally developed a matricidal mania. After a few weeks the symptoms entirely disappeared. Dr. Welt-Kakels believed the state of equilibrium was low and the infectious agent acted upon the ganglionic cells; the slight irritating influence was sufficient to produce the mental disturbance.

Dr. F. L. Wachenheim said that they could not be too careful in making a distinction between these cases that had just been reported and encephalitis. These psychoses were asthenic, the result of some disturbance caused by an infectious agent. The characteristic thing in encephalitis was that the convulsion or paretic attack might pass on to complete paralysis. The mental symptoms only appeared gradually. The prognosis in encephalitis was bad.

Dr. Sheffield said he could not understand how the doctor could call these attacks of convulsions sequellae of measles or scarlet fever. He had had such symptoms follow influenza. He asked why these attacks should follow measles and scarlet fever and not other conditions.

Dr. Max G. Schlapp said that there was no question but that these attacks of encephalitis resulted from croupous pneumonia and all sorts of infectious diseases and they should not be restricted to measles and scarlet fever. These conditions with gliosis were more commonly met with after measles and scarlet fever than after other infectious diseases. Perhaps that was because these diseases were more common in children.

A CASE OF INFANTILISM.—Dr. Hermann Schwarz presented a boy sixteen years of age, born in New York of Irish parentage. The family history showed no lues or tuberculosis. The child was a blue baby. He had had no skin disease or snuffles. He did not cut his first tooth until he was a year old. He walked when two years old and was small when 12 years of age. He came to the clinic because he did not grow. When he first came to the clinic two years ago his general condition was fair; his hair grew slowly, needing cutting only once in four months. His eyebrows were sparse, skin delicate and smooth, the nose broad and well formed, the mouth small and well shaped, the forehead wrinkled and the face small. The teeth and ears were well formed. The throat was negative; the palate not high arched. The thyroid was not palpable, the larynx not large. The heart and lungs were negative. The spleen was just palpable and the liver was felt two fingers below the free border and just palpable. The bones showed no enlargement and no deformities. All the measurements were given which showed that he was uniformly very much below the normal boy in all respects.

INFANTILISM AND ALLIED CONDITIONS.—Dr. Hermann Schwarz read this paper, in which he said that he had gone into this condition because the text books had paid so little attention to the subject. Infantilism was an underdevelopment. It was purely an arrest in developments and not pathological. This arrest might occur in embrioniacal, infantile or adolescent life. Infantilism might be classified into universalis and partialis. The latter might be divided into infantilism partialis formalis as when an organ was infantile in form but not in function and infantitis partialis copicus as when an organ was normal as to form but infantile as to function. The writer then compared the various parts of the body and discussed their infantile characteristics. Universal infantilism might be classified as follows from an etiological standpoint.

(a) Infantilism with myxodema or cretinism.

(b) With Mongolism.

(c) Infantilism due to disturbances in function of the testicles, thyroid, thymus, adrenals or hypophysis cerebri.

(d) Infantilism dystrophicus due to
  (1) Arterial aplasia.
  (2) Hereditary syphilis.
  (3) Primary brain disease.
  (4) Alcohol or other poisons in the parent, such as lead.
  (5) With early constitutional disease, such as tuberculosis.
  (6) Due to poor food and hygienic surroundings.
  (7) Trauma.

Opinions differed as to the role played by the various glands in the production of infantilism. Clinically infantilism might be divided into two types, the Lorain and the Brissand. In the former there was the stunted growth and small head, thin, lank extremities, short trunk and lack of sexual development. In the Brissand type there was the stunted growth, the large head, rounded face, prominent abdomen, short legs, irresponsible character; in fact they were really instances of hyperthyroidism. Dr. Schwarz gave anthropological measurements which were important in placing the patient as an infant or an adolescent.

Dr. Sheffield asked about the mental condition of the child presented by Dr. Schwarz.

Dr. Schwarz replied that it was about the same as that of a normal boy of the same age. He had absolutely no sexual instinct.

Dr. L. E. LaFetra said that this was an interesting type of cases. Cretinism had long interested him both from a diagnostic and therapeutical standpoint. He had tried the methods of treatment that he had found in literature but had not had the success that one would wish. He thought the treatment recommended by Bramwell years ago was as good as any yet offered. He had had good results with it and it was a rational method of treatment.

RHEUMATIC AFFECTIONS IN CHILDREN. A CLINICAL STUDY.—Dr. F. L. Wachenheim presented this paper. He said that the review of a fairly large amount of material might serve to illustrate some matters that became clearer as more and more cases were studied. He had collected 113 cases of rheumatic disease in the course of 41 months out of a total of 8,000 children. The total number of children between the ages of 0 and 3 years was 5,200; of these there were 4 rheumatic cases. The total number of cases between the ages of four and eight years was 1,900 and of these 55 were rheumatic. The total number of the children between 9 and 13 years was 900 and of these 54 were rheumatic. The distribution of the various types of rheumatic disease was as follows. Of chorea there were 4 male and 5 female; of chorea and endocarditis, 5 male and 3 female; of chorea, endocarditis and rheumatism, 3 male and 4 female; of chorea and rheumatism 5 female; of endocarditis and rheumatism 21 male and 27 female and of rheumatism alone 16 male and 20 female. This table shows that these rheumatic diseases are more common among female than among male children. Of the 96 cases of rheumatism very few were severe and treatment with salicylates was rapidly effective. In the subacute cases when only one of the lower extremities was affected their chief diagnostic difficulty was the exclusion of articular tuberculosis. The therapeutic test would clear up many of these cases. He warned against making a diagnosis of rheumatism in infancy and early childhood, although he could report two cases of torticollis in infants 14 and 16 months of age. These got well in a short time on small doses of salicylates. Of some half dozen cases of erythema multiforme and two of Henoch's purpura not a single case suffered from cardiac lesion. It was evident that purpura was not necessarily a symptom of true rheumatism. The cardiac cases ranged from the very acute to the chronic with fully compensated valvular disease. Only one case of pericarditis occurred in the whole series. About 60% of all his cases presented an unquestioned cardiac lesion. A number had so-called functional murmurs. Two points seemed to be proven beyond a doubt: First, that the endocardium was the seat of election for the rheumatic infecting agent during early childhood, and that implication of the articular serous membranes became conspicuous only after the fourth or fifth year. Second, that the prognosis of valvular disease, especially of the mitral valve, was far better than set down in books. It is well to be extremely reserved as regards prognosis of cardiac cases in children under the age of puberty. Compensation was easily established in young children, but was also easily upset. The danger of exacerbations was ever before them until the age of fourteen was reached. He emphasized the interrelation of chorea, endocarditis and rheumatism. Only one-third of his 29 cases of chorea failed to show one or the other or both complications. Tonsillitis was a strikingly frequent complication in this series. With regard to recurrence the prognosis was not good. In the majority of recurrences a recrudescence of the cardiac lesion was found. Rheumatism in children was a most serious affection, the more so the younger the patient. In children, as in adults, the salicylates were the main resource in treatment but they were not infallible. The most striking effect of these drugs was the relief of pain, and severe pain was unusual in early life in rheumatism. He found the salicylates of sodium the most efficient. Warmth was also useful and in chronic cases tincture of iodine applied locally seemed of little use. Endocarditis could be treated by rest in bed and local applications of cold. Cardiac stimulants should be reserved for contingencies. Much harm had been done by the indiscriminate administration of digitalis, which did not favor the subsidence of the inflammatory process. Digitalis should be reserved for deficient compensation in chronic heart disease when an exacerbation could positively be excluded.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Section on Pediatrics.

STATED MEETING MAY 15, 1908.

DR. ARCHIBALD D. SMITH, CHAIRMAN.

I. DIABETES MELLITUS IN INFANTS AND YOUNG CHILDREN, by H. B. Wilcox, M. D., Manhattan.—This condition is not so rare as is generally supposed; it frequently escapes recognition because the urine is not examined. In its etiology, heredity seems to play a part, the children often being descended from diabetic ancestors; a neurotic inheritance, trauma, and acute infectious diseases, (especially the last named,) seem to be responsible for many cases. Bad hygiene, too rapid growth, and dentition are only secondary causes.

There seems to be a greater sugar capacity in children than in adults, in proportion to the body weight. The average adult can digest 100 to 150 *grams* of glucose without sugar appearing in the urine. Children from 3 to 5 years show a capacity for 30 grams of glucose, and those from 5 to 10 years, 50 grams. In testing this, the glucose is given two hours after a meal, first emptying the bladder. The next urine voided is examined for glucose.

Many diabetic children are found who have been inordinately fond of sweets before the disease developed.

The only symptoms some children show are fretfulness and lassitude; these cases are often overlooked. There is often no increase in appetite at first. Other common symptoms are emaciation, polyuria, thirst, pain and tenderness over the region of the pancreas, urticaria, and very slow healing of any wounds that the child may sustain. In most fatal cases (and this includes nearly *all* diabetic children,) albumin and casts finally appear in the urine; also acetone, diacetic acid, and oxybutyric acid.

The course of the disease is shorter than in adults. It is almost uniformly fatal. Often the case remains latent for months, then rapidly progressing to a fatal termination.

Of the complications, tuberculosis, boils, pruritus and gangrene are the most common; but they all occur less frequently than in adults.

The pathology of diabetes in children is the same as in adults; the same changes in the pancreas, liver, kidney and brain have been described at autopsy.

The objects of treatment are (1) to maintain nutrition, (2) to keep the glucose in the urine as low as possible, (3) to keep the acid bodies out of the urine. The child should live a regular life of sleeping, eating, resting, and *light* exercise, care being taken that there is no waste of nervous energy. It is well to use two diets, one a strict sugar-free diet, the other a supplementary diet, containing that form of carbohydrate which the child can "burn" most readily. This last point is found by experiment on each case; many children can take oatmeal without showing glycosuria, but they cannot dispose of other forms of carbohydate. The supplementary diet is to be used occasionally, when the child's nutrition seems to suffer from the strict diet, or when diacetic acid appears in the urine. The presence of diacetic acid, (as shown by the ferric chloride test,) is always an indication for more carbohydrate, which must be given freely if the acid persists; sodium bicarbonate is also needed by mouth when diacetic acid appears in the urine, and if coma appears or seems imminent the bicarbonate must be given intravenously. Drugs are of little or no use in diabetes.

Dr. J. W. Parrish, in discussing Dr. Wilcox's paper, spoke of several cases which he had seen, in which the presence of sugar in the urine had only been discovered in a routine examination.

He had in mind two cases which had shown only fretfulness and nocturnal incontinence when first brought to him. He had noticed a high percentage of urea in his diabetics.

Dr. Hutchinson asked why glucose rather than saccharose was used in testing the sugar capacity of patients.

Dr. Bartley, in answer to Dr. Hutchinson's question said that saccharose was split up into glucose and levulose; that patients could "burn" levulose when they could not burn glucose; hence, weight for weight, glucose itself was a more severe test of the patient's ability to "burn" sugar, than saccharose was. Dr. Bartley went on to say that diabetes, in his experience, was always fatal in children. He said that the increase in urea was due to the fact that diabetics, since they did not consume sugar enough to keep up their energy, had to live on their proteids in their tissues.

II. THE MARANTIC INFANT, by G. F. Little, M. D.—The term Marasmus, as used by American writers, means an extreme degree of malnutrition. There is no organic lesion, it is a "vice of nutrition," in Holt's words. The important causes are improper feeding, bad hygiene, and hereditary weakness of resistance. In speaking of improper feeding, condensed milk must be mentioned and condemned. It is not profane to say "war is hell," in the words of Sherman; and it is not profane to say "Condensed milk is hell for babies." Every child fed exclusively on condensed milk for any length of time will develop rickets.

Some authorities think marasmus is infectious, but this does not seem to be proved.

Diagnosis seems easy; hence it frequently happens that every emaciated infant is called marantic, and organic diseases, (such as tuberculosis, syphilis, empyema, etc.) are apt to be overlooked.

For the prevention of marasmus, a campaign of education is necessary. The mothers must be taught how to feed their babies, and how to care for them in other ways. The best way to educate the public is through the newspapers; and medical ethics should not keep us from our full duty to the infant.

The marantic infant is fairly well looked after by charity in the summer, but the need extends also to the winter, all-the-year-round milk charities are needed.

The best treatment for marasmus is a wet nurse. Unfortunately this is impracticable in most cases. Fresh air and sunshine are valuable. In choosing a formula for the child, care should be taken that too strong a formula is not used. It is far preferable to use too weak a one at the onset. Whey is a very useful food for these infants, and the use of citrate of soda in the milk is a valuable aid to feeding these difficult cases. Inunctions of cocoa butter or olive oil serve to keep the skin in good condition, and may be of some nutritive value. We should make use of drugs as seldom as possible in these cases; bismuth is needed more often than any other drug. It is used to control diarrhoea.

Dr. Smith said that education about marasmus should begin with the medical profession. The dispensaries are constantly seeing children for whom doctors have ordered condensed milk.

Dr. Parrish said that he had used condensed milk often, and had seen it do good. He had seen "modified" milk do harm many times. Often when it is "modified" so as to be weak enough to be digestible, it is too weak to nourish. In these cases, condensed milk often does well.

Dr. Beck spoke of the excellent results of fresh air treatment at Coney Island.

Dr. Hutchinson said that he believed the public could be educated through the newspapers. The papers are all praising pasteurized milk at present. It is not a cure-all for all diseases of children, but everyone knows something of its value through newspapers; if someone could direct the newspapers' energies along the proper lines, much good would result.

Dr. Edson said that he had seen condensed milk do lots of good, when used intelligently. We should draw a distinction between good condensed milk and many cheap brands now on the market.

Dr. Bartley said that he was in favor of reaching the public through the papers, by means of articles approved by the section.

Another good way would be by a course of lectures given at the public schools in their winter lecture course.

Dr. Little, in closing the discussion, said that he did not mean to condemn condensed milk entirely. It is often useful for a few days at a time, as during some acute illness, or when an infant is taken on a journey and fresh milk is temporarily unobtainable. But as a steady diet, it is inexcusable.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 30 West 33rd St., New York.
Telephone 1032 Gramercy.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES. Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL.

COLLABORATORS FOR PEDIATRICS.

The editor takes great pleasure in announcing that beginning with the August issue, Pediatrics will have the valuable assistance of a board of collaborators. Most of these gentlemen are professors of pediatrics in the various medical colleges, while the other specialists are well known for the work that they have accomplished in surgery, diseases of the eye, ear, nose and throat, in the nervous system and in pathology and bacteriology. From time to time new names will be added to this list, and we have no doubt that the readers of this Journal will find its contents of more and more value.

THE ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN.

In this issue will be found the commencement of a series of scientific papers read at the 2nd annual meeting of the above association, held in Chicago, June 1st, 1908. This association holds a unique place in scientific bodies, as its membership is chiefly composed of those who are actively teaching pediatrics.

THE SECOND ANNUAL CONFERENCE OF THE AMERICAN ASSOCIATION OF MEDICAL MILK COMMISSIONS IN THE UNITED STATES.

Beginning with this issue PEDIATRICS will publish monthly the papers, and reports of committees read at the meeting held in Chicago, June 1st, 1908. These papers will be of the greatest service, not only to the various medical milk commissions, but to all who are concerned in the production of clean milk.

PROF. SCHLOSSMANN'S CLINIC.

Prof. Schlossmann has arranged for a number of post-graduate courses in the Nourishment and Diseases of Infants at the Infants' Hospital at Dusseldorf, Germany. Prof. Schlossmann has a wide reputation and these courses which last for two weeks will be of very great value to any American physician wishing work along this line. Prof. Schlossmann has always been cordial to American physicians and we are sure that the news will be received with pleasure by many of his former students in this country.

BOOK REVIEWS.

THE DISEASES OF CHILDREN: A WORK FOR THE PRACTICING PHYSICIAN. Edited by Dr. M. Pfaundler, Professor of Children's Diseases and Director of the Children's Clinic at the University of Munich and Dr. A. Schlossmann, Professor of Children's Diseases and Director of the Children's Clinic at the Medical Academy of Dusseldorf. English Translation edited by Henry L. K. Shaw, M. D., Albany, N. Y., Clinical Professor Diseases of Children, Albany Medical College; Physician-in-Charge St. Margaret's House for Infants, Albany, and Linnaeus LaFetra, M. D., New York, N. Y., Instructor of Diseases of Children, Columbia University; Chief of Department of Diseases of Children, Vanderbilt Clinic; Assistant Attending Physician to the Babies Hospital, with an Introduction by L. Emmett Holt, M. D., New York, N. Y., Professor of Pediatrics, Columbia University. In four volumes. Illustrated in black and white and in colors by 61 full-page plates and 430 text-cuts. Philadelphia and London. J. B. Lippincott Company. Price $20.00.

Holt says in his introduction, that while pediatric literature in the United States is barely twenty-five years old it is remarkable that its growth has been so great and that possibly no other branch of medical science has developed more rapidly; that the death rate in New York City of children under five years of age has fallen in the past eighteen years from 1,160 to 620 per 100,000 population; he attributes this to the "newly acquired knowledge in the hygiene and medical treatment of children, in both hospital and private practice, and the dissemination of such knowledge through the agency of pediatric literature."

Pediatrics is a young specialty and it is the younger men who are devoting the most time and attention to it; Pfaundler is 34 years old, and is a professor at Munich of one of the largest universities, while Schlossman is about the same age and holds the same position in his university. Shaw and Lefetra are both young men and deserve the greatest credit both for the clearness of the translations, that by the way have no traces of foreign idioms, and the notes they have added which seemed necessary for the American edition.

This is the first complete work on this subject that has appeared since the publication many years ago of Keating's Encyclopedia of Children's Diseases. The authors of the various topics are authorities and have said the "last word" up to the present time. There is so much to commend in the four large volumes that it is difficult to pick out any one for especial mention, however in volume I, Pfaundler's Symptomatology of

Children's Diseases of over 200 pages will be found of signal usefulness in the observation of symptoms and its aid in making a diagnosis. The article on milk by Prof. Raudnitz is of great value, a subject not entered into in great fulness in any particular American work.

In the second volume the section on Diseases of Puberty by Prof. C. Seitz is something entirely new and will no doubt stimulate special attention to this period, heretofore neglected.

In the third volume the article on Diseases of Nutrition in Infancy by Prof. Fischel contains much of interest and may perhaps change many of our pre-conceived notions on infant feeding.

PUBLISHER'S NOTICE.

THE SECRET OF SUCCESS.

The secret of success is hard, honest, continual, intelligent work—and nothing else. Unsuccessful men may doubt this—but it is safe to try.

We have worked hard, honestly and continuously, but not always intelligently. We have tried not to make the same mistake twice; we have done the best we knew and have tried to learn to do better. We mean to treat everyone alike and as we would like to be treated, and to *see* that others treat us fairly. When we began, we determined to borrow, owe and imitate nothing; to have one price for all and to return the purchase price, immediately and without question, to any physician who stated that our preparations were unsatisfactory. We have done this for eleven years. Today, over fifty thousand physicians are purchasing direct from us; and the same men still in practice who bought our tablets eleven years ago, are buying them now. Our annual sale of Papayans Bell is over three hundred million tablets.

We own, free and clear, a large laboratory and nine cottages, all of which have been bought and paid for exclusively from the profits of our business.

Every year for ten years we have been obliged to enlarge our quarters. We began with just one thousand dollars and no prestige. We have had no help except the confidence of physicians, for which we are deeply grateful. Our preparations have justified this confidence and we have succeeded largely because of that fact.

BELL & COMPANY, (Inc.)

ORANGEBURG, NEW YORK.

PEDIATRICS

Vol. XX AUGUST, 1908 No. 8

ORIGINAL ARTICLES

THE ESSENTIALS IN THE PRODUCTION OF CLEAN MILK.*

By Rowland G. Freeman, M. D.,
New York City.

In consideration of the essentials for the production of clean milk we will first consider the ways in which bacteria get into milk and afterwards the methods for keeping them out.

The ways in which they get into milk may be considered under five headings:

FIRST: FROM DROPPINGS FROM THE BELLY AND UDDER OF THE COW DURING MILKING.

SECOND: FROM UNCLEAN UTENSILS.

THIRD: FROM THE MILKER.

FOURTH: FROM FLIES.

FIFTH: FROM THE MILK DUCTS OF THE COW.

The Udder and Hide. The bacteria which drop with the dirt held by the hair on the udder and belly, when this part is agitated during milking, furnish, in general, by far the greatest contamination of milk. This may be well shown by the experiment of exposing three petrie plates simultaneously out of doors, in a barn and under the udder of a cow during milking. This experiment which will usually show less than ten colonies of bacteria on the plate exposed for two minutes out of doors, more than 100 on that exposed in the barn and some 2,000 on that exposed under the udder of the cow during milking, demonstrates that the air of the barn is much more filled with dust than that out of doors and that the droppings from the agitated udder are some twenty times that from the air of the barn and that thus the largest, the most usual and constant contamination of the milk is from the perpendicular droppings from the belly and udder of the cow agitated by pulling at the teats. This is a regular factor, always present, and its consideration is of first importance in attempting to reduce the bacteria in milk. The sort of bacteria this contamination produces are usually harmless but disease-causing bacteria may be introduced in this way. This contamination consists of bacteria adhering to particles of manure and hair and dirt and occasionally with vermin such as lice and fleas.

---

*Read at the Second Annual Conference of the American Association of Medical Milk Commissions, Chicago, June 1st, 1908.

Dirty Utensils. The second largest contamination probably arises from unclean utensils. This contamination is of a more varied character and is dependent upon the efficiency with which the vessels on each particular day are cleansed. If they are cleansed with dirty water and not sterilized this contamination is very large, or if, as has been the case, they are wiped with a towel previously used in caring for a case of typhoid fever the contamination is very dangerous. This contamination may be of harmless bacteria but on account of the frequency of dangerous contamination of our barn-yard water supplies this is often the means of introducing disease-causing bacteria.

The Milker. The third source of contamination is from the milker and this is by far the most dangerous. If the milker suffers from a condition of walking typhoid, as has been the case in some epidemics, or is a cured typhoid still harboring the organism in his intestinal tract, even though his hands are carefully washed, a contamination of the milk may occur which will cause typhoid fever in a considerable proportion of the drinkers of the milk. If a milkman has a mild case of diphtheria, or if he is a healthy man but harboring the diphtheria organism in his throat, a cough or a sneeze during milking may cause a contamination of the milk which will give rise to an epidemic of this disease amongst the drinkers of this milk. The danger of this contamination is well demonstrated by holding a sterile petrie plate with nutrient media three feet in front of a man coughing. This produces very numerous colonies, while a sneeze under the same conditions produces a still greater contamination.

Flies. A fourth source of danger to milk is in the presence of flies. Flies naturally seek any filth and feed on it, passing from one place to another, in this way carrying on their bodies particles of dirt and bacteria from place to place. The danger from flies in carrying bacteria and dirt has been well demonstrated by another experiment with petrie plates, a fly being first allowed to come in contact with sputum and then to crawl over gelatin on a petrie plate. Wherever his feet or body touch the plate numerous colonies of bacteria grow, so that flies which first light on manure and then fall into the milk pail or milk bottle carry with them large and often dangerous contamination of bacteria. It is therefore evident that flies must be kept, so far as possible, out of places where the sanitary handling of milk is attempted.

Udder Ducts. A fifth source of bacteria in milk is from the udder of the cow. The number of bacteria that get into the milk from a healthy, normal udder is very small. There are some in the lower part of the follicles which are washed out by the first milk that passes through. There are, however, certain conditions where these bacteria are more numerous and sometimes of a dangerous character. If the cow has leaky teats the bacteria are usually present in large numbers in the udder and although much more numerous in the first milk obtained such contamination usually continues to some extent throughout the whole of the milking. Again in garget or suppurative mastitis many bacteria are found in the milk, usually streptococci, while as is well known, if tuberculous disease has attacked the udder, even if so slightly as to give no evidence on feeling of the teats, tubercle bacilli may be found in the milk.

In these five divisions then we have the sources of ordinary milk contamination. Other contaminations will occur occasionally in the handling of the milk, perhaps in the bottling or where the vicious custom of mixing the milk in vats to obtain certain fat percentages is practised, every manipulation affording a further danger of contamination. The increase in the number of bacteria, if the milk is allowed to become warm, of course exaggerates all the defects in the early handling.

Now as to the means at our command to reduce to a minimum these contaminations of milk.

Protection from bacteria on belly and udder of cow. In the first place in order to reduce the contamination from the belly and udder there have been gradually worked out a number of methods by which it has been shown that this can be reduced almost to zero.

In order to reduce the amount of this perpendicular dropping we remove the hair from the hide of that portion of the belly and udder which is over the pail during milking by clipping. A general grooming of the cow is, however, a necessary preliminary to cleanly milking. The portion of the belly and udder which is over the pail during milking is also washed as well as the end of the tail which may be whisked about. But before this cleansing of the cow takes place something must be done to prevent the cow from lying down after being washed and before being milked. This problem has been well solved by the little chain which passes under the neck of the cow and which effectually prevents her from lying down. The most evident need is a hooded pail, which when properly used stops the perpendicular droppings from entering the pail. One method of milking has been found to increase materially this contamination, even when the proper pail is used, this is the jerking of the teats during milking. It has been found that milkmen who jerk the teats during milking produce ten times the contamination produced by quiet milkers.

Protection from utensil contamination. The danger from utensils can be removed only by washing them thoroughly in clean water, subsequently sterilizing them and keeping them sterile until used.

Protection from contamination by the milker. The dangers from the milker are minimized by employing single men who live in barracks, for they are less likely to carry contamination from houses where contagious diseases exist. Ample washing facilities with soap, nail brushes and towels in the stables in order that the hands may be kept clean during milking; the use of a washable suit to be drawn over the other clothing during the time of milking; the insistence of dry milking and the use of the hooded pail all reduce to a minimum this danger.

Protection from flies. Fourth the danger from flies can only be remedied by scrupulous cleanliness and such protection as is possible. Cow stables should have the manure removed frequently and there seems no reason why the ordinary house method of eliminating flies by means of screen doors and windows may not be applied to cow stables. In the bottling room the presence of flies may be effectively discouraged by cold and this method is carried out in one dairy where a small bottling room containing a bottling machine opens into the refrigerating plant of the dairy.

Protection from bacteria in the milk ducts. Fifth the elimination of udder bacteria from a milk supply is for the most part simple. No cow with leaky teats should be used in the production of sanitary milk because it has been demonstrated that such cows have many bacteria in the milk in the udder, nor should any cow that produces milk containing mucus or pus be used, while it is universally agreed that cows with nodules in the udder which may be tuberculous should be excluded.

In the foregoing I have reviewed briefly the methods in use at the present time. That these will be further modified and improved no one can doubt but it can be said that the careful and enthusiastic application of these methods has made it possible to produce a milk that contains very few bacteria. Although it must be admitted that our ordinary certified milk is not really very clean it is extraordinarily clean in comparison with ordinary commercial milk but no substance which contains several hundred bacteria in each drop should be considered clean.

Exudative Pleurisy in Childhood— Sookolow (Jahrb. f. Kinderheilk., January, 1908), as the result of careful clinical and experimental study, reaches the following conclusions: Free fluid in the pleural cavity collects at first in the lower lateral portion of the cavity. The exudation takes the form of a pyramid with the base on the diaphragm (cresent-shaped), with the truncated top at the lateral wall of the thorax, in the median or posterior axillary line. The author determined this fact through methods of clinical examination, by means of the x-ray, by pouring in various kinds of fluid into the pleural cavity, by means of anatomical studies, and by manometric measurements of the tension in the pleural cavity. The position of the fluid does not change with change in the position of the body, even in hydrothorax. The retraction of the lungs, which is most marked in those parts of the lungs furthest removed from the hilus, is the cause of the phenomena noted above.—Interstate Med. Jour., March, 1908.

Syphilis in Children— (N. Y. State Journal of Medicine) —Weiss states that the number of cases of inherited syphilis far outnumbers the cases acquired. He divides the modes of transmission into three classes.

1. Direct infection of the healthy mother by the diseased father having florid secondary symptoms causing in the mother the same kind of lesions. The child so conceived usually dies in utero and is aborted. 2. Direct transmission of syphilitic taint through the infection sperm of the father, the mother being healthy. In such cases, the mother may remain well and even the child may escape. The mother may become immune through absorption of toxins elaborated by the fetus. When the infection is on the part of the mother with a diseased ovule the taint is more disastrous to the child than paternal heredity. This condition is rare. 3. Infection of the fetus when the parents were healthy at the time of impregnation and infection of the mother takes place during pregnancy. By treatment of the parents or by natural attenuation, viable healthy children may be born and these are immune against the acquisition of syphilis.

WHAT CONDITIONS DEMAND COMPLETE AND WHAT DEMAND PARTIAL WEANING OF THE INFANT DURING THE FIRST TWO WEEKS OF INFANTILE LIFE.*

By Charles Douglas, M. D.,

PROFESSOR OF CHILDREN'S DISEASES AND CLINICAL MEDICINE DETROIT COLLEGE OF MEDICINE; PHYSICIAN TO THE PROTESTANT ORPHAN ASYLUM AND CONSULTING PHYSICIAN TO HARPER HOSPITAL.

The birth of an infant is only one period of its development from the earliest embryonic state to the end of its infantile life, at which time the digestive glands in the healthy uninjured child, are enough developed to convert into perfect aliment nearly all the foods in the dietary of the adult. The period of infancy comprises the first two years, or that length of time after birth usually required to grow the first set of teeth. Experience shows that the gradual evolution of these teeth is accompanied by the progressive growth of the whole digestive tract, to that perfection necessary in consuming the same dietary as the adult.

The many varieties of malnutrition which we meet, evidence the results following an error in nutrition during the first few months of the infant's life, whether this error be caused by improper development in the digestive tract of the child, or by food too difficult to convert by the weak digestive secretions of that early age. This error in foods may be caused by the quality or the quantity given at each meal.

---

*Read at the Second Annual Meeting of "The Association of American Teachers of the Diseases of Children," Chicago, June 1st, 1908.

Many of these errors are commenced during the first two weeks of infantile life, and are followed in some cases, by fatal consequences. While in others, the damage done in this short time, requires weeks, months or even years to repair—some carrying the evidences of these early errors all their lives.

In the animal kingdom it is part of Nature's plan that the mother supply all the fat, proteid and sugar to her progeny for only a few weeks. In the human family, nature has imposed this necessity upon the mother during the greater part of the first year, but there are many of these mothers who are unable to perform this duty successfully. Some have not enough food for the infant, while others have enough but the quality of it is unsuited to the digestive power of the infant. Of these two faulty conditions, the insufficient amount is the least harmful, as starvation is most commonly soon recognized and little damage is done thereby. In this case the restlessness and cries of the infant, with the loss of weight, soon warn the mother that she has not enough milk to satisfy the child, and other nourishment is provided, which, if suitable in quality, at once produces satisfactory sleep and increased weight.

Where the mother has abundance of milk but the quality is unsuited to the child's digestive power, we find the infant is crying almost constantly, and having little sleep. This always worries the mother, disturbs her sleep, frequently interferes with her digestion, and thus depreciates the quality of her milk still more. This condition is too frequently continued until the infant's digestive glands are permanently injured.

The causes which contribute to produce these unfavorable results during the first two weeks of infantile life, are many and varied. Looking at them from the mother's side, we find that there are some mothers who should always be prohibited from nursing, regardless of the present condition of the child, and others who should be prohibited only on account of the child being improperly nourished, becoming very unhappy, losing much sleep and particularly because it fails to grow.

The following mothers should never be allowed to nurse their infants:

1. Those suffering from marked septicaemia.
2. Insane mothers.
3. Those with suppurating breasts where pus is found in the milk.
4. Many mothers with enlarged thyroid.
5. Tubercular mothers.
6. Mothers with uncontrollable nervousness.
7. Mothers suffering from albuminuria.
8. All mothers whose milk makes the infant's stools green all the time.

Mothers suffering slightly from septic infection, and whose temperature or appetite is little if any disturbed, may continue to nurse if the stools of their infants are mostly yellow in color. A little green mucus in an occasional stool is not evidence of a serious error in the quality of the milk, but where the stools are all green and ropy in consistence, the infant should be weaned immediately. This occurs in very septic mothers.

Many mothers can nurse when suffering from one suppurating breast, if the other one is not affected, but when both breasts are diseased, the infant should be weaned at once, particularly if the microscope shows there is pus in the milk.

Enlarged thyroid, when accompanied by tachycardia and general weakness of the mother, so depreciates the nutritional qualities of the milk as to prevent the proper nutrition of the child.

Mothers suffering from tubercular infection require all the nourishment for themselves that their food can supply. There is also the risk of the mamma becoming infected with tubercle thus contaminating the milk, and infecting the infant.

Extreme or uncontrollable nervousness in many mothers, so effectually varies the quality of the milk, that the infant is constantly suffering from indigestion, with consequent colic and disturbed sleep. In some of these infants, the disturbance is so great as to cause convulsions. An infant requires continued good nourishment in order to be successful.

Mothers suffering from albuminuria are always so poorly nourished themselves that they cannot properly nourish their infants. Their own infirmity compels them to adopt a dietary which makes a poor quality of milk and also prevents them from crowding their digestive tract with enough food to make a better quality of milk.

There are a large number of women who are physically strong and vigorous, but who secrete a milk that their infants cannot comfortably digest. These infants always have green stools with no admixture of yellow, and frequently these are foul odored also. Such mothers are compelled in time to wean their infants, but most of them continue nursing for several weeks changing their own food and giving the infants calomel or castor oil, cordials and colic cures in a vain but ineffectual effort to make the baby comfortable and grow satisfactorily. They do not realize that a continuously all green mucus stool is a pathological condition and shows that part of the lower bowel is in an inflamed condition and that the only cause of this is the quality of the food she is supplying. Such infants should always be considered as suffering from ileo-colitis and the food changed. The following case illustrates the bad effects produced by not weaning an infant suffering in this way. I was asked by the attending physician to see J. B., a strong vigorous infant eight days old. He was nursing his mother who had abundance of milk, but his stools had been continuously green and contained much mucus. He had been straining a great deal and during the time I was present, made forcible efforts to void the stool. These were so great that the anus was dilated widely and the rectum covered with green mucus, was forced partially through it. As no food had been given but the mother's milk, I suggested substitute feeding of a cream and sugar mixture. The irritation in the bowel subsided quickly and the stools became yellow. Unfortunately he was again put to the breast and the green stools returned but not with the extremely injurious results shown during the first week. The lesser irritation was no doubt due to having passed the colostrum stage in nursing. After trying to feed him successfully for several weeks while he was having stools composed mostly of green mucus, he was finally weaned, but the digestive tract was injured so badly that he could never consume enough food to make him grow satisfactorily. He is now nearly three years old but weighs less than twenty pounds though the parents have been industrious in watching his diet since weaning him.

Infants who should be partially weaned during the first two weeks are the following:

1. Those who have healthy yellow stools, but who are not satisfied after nursing ten to fifteen minutes.

2. Those who stools always contain a large proportion of green mucus.

3. Those whose stools are yellow, but very thin and watery, making only a stain on the diaper, without any mustard paste consistence.

Where the stool is a healthy yellow in character and the infant is not satisfied after ten to fifteen minutes nursing, it is evident that the mother should have more and better nourishment and she should be relieved of all care and labor so that she may be able to secrete more milk. Such mothers also require abundance of sleep. Well cooked, nourishing gruels should be added to the regular dietary. These mothers are usually much reduced in strength and flesh, and only require feeding up to be able to nurse the infant successfully.

There are a few of these mothers who do not respond to this increased feeding and rest, who gradually secrete less milk and whose infants have to be weaned entirely after a few weeks of unsuccessful but healthy nursing.

Of those infants whose stools always contain a large amount of green mucus mixed with the healthy yellow, there are a larger number. The mothers in these cases are either sick or feverish from some cause, are improperly fed, are taking medicine unsuitable to a nursing woman, are fleshy heavy women whose food is utilized mostly in making themselves fleshy, strong and vigorous, or they are women who are habitual sufferers from indigestion and are consequently poorly nourished. The above classes of mothers usually secrete a large amount of colostrum in their milk during the first two weeks. This irritates the digestive tract in their infants and it is desirable by partial feeding on a cream and sugar mixture, to avoid injurious results, until the stools become all yellow or show that they cannot be improved in character and complete weaning is needed.

The object of early partial feedings is first, to avoid loss of weight in the infant and second to avoid those injurious results on the infant's digestive tract, which materially lessen its future growth and development.

Of those infants whose stools are yellow, but very thin and watery, making only a stain on the diaper, there are also a large number.

Milk which gives this character of stool, contains plenty of fat and sugar, but is very low in proteid. It is nutritious for a while and infants grow accordingly but not so satisfactorily as do those infants whose stools show more consistence and lodge on the face of the diaper. These infants require dilute skim milk additions to their dietary until such time as the mother's milk will supply enough proteid to make the proper stool alone.

The mothers of these infants are usually women who partake largely of starchy and sugary foods themselves, and should be encouraged to consume more milk, eggs and meat, and less of the starchy and sweet foods.

Summary:

1. Complete substitute feeding from birth should be insisted on with those infants whose mothers would be seriously injured by nursing their infants, or who are suffering from any dangerous or chronic infection which can be transmitted to the infant through the milk.

2. Infants should always be weaned during the first two weeks when the stools show no yellow but continue to be all green in color.

3. Partial substitute feeding should be adopted always when the mother's milk is deficient in amount; when the infantile stools show much green mucus mixed with the yellow: and when the infantile stools are watery in consistence and soak entirely into the diaper leaving no substance of a pasty consistence on the surface of it.

LEGISLATION AS A FACTOR IN THE PRODUCTION OF CLEAN MILK.*

By Henry Enos Tuley, M. D.,

PROFESSOR OBSTETRICS UNIVERSITY OF LOUISVILLE, MEDICAL DEPT.,
MEMBER OF THE JEFFERSON COUNTY MEDICAL MILK
COMMISSION, L'UISVILLE, KY.

It is not my purpose in these few remarks to deal with the broad question of legislation in regard to the general milk supply of cities, as that phase of the subject is too complicated and difficult to come within the limits of a short paper. I would rather confine myself briefly to the subject of legislation as relates to Certified Milk, although if I mistake not, this subject has been referred to a special committee for action, and report at this meeting.

The proper recognition of the term Certified Milk, legally, is the foundation stone upon which our work as individual Milk Commissions and as a National Organization is builded. The very fact that there are but 30 Milk Commissions, certifying to the product of dairies, and larger number of producers of a so-called Certified Milk in the United States, is sufficient evidence of the importance of this phase of the subject, and in my judgment one of the most important with which this Association must deal.

Our Secretary has obtained an opinion of a leading patent attorney that the copyright of the term Certified Milk, obtained at the very inception of the work, by Dr. Coit and Mr. Francesco, is not sufficient to protect the words or to prevent its use by interested parties for pure commercial reasons.

---

*Read at the Second Annual Conference of the American Association of Medical Milk Commission, Chicago, June 1st, 1908.

That the term is recognized and the copyright respected in part at least is evidenced by the fact that a leading attorney of Louisville endeavored to obtain the consent of Dr. Coit to its use by a dairyman who would not have his product certified to by our Milk Commission, desiring rather to employ a private Commission of his selection to issue his certificate.

I feel sure that the majority of our members have had an experience like ours in Louisville, yet a recital of our trials can not but be productive of some good and a help to others.

So successful was Certified Milk in obtaining public recognition in Louisville, that the larger distributors of market milk began to take notice, as their output was considerably curtailed. One dealer especially who enjoyed a large business among the well-to-do experienced a large decrease in his customers and recognizing the factor in this defection from his list, had an interview with the Commission with a view to having the output of one of the dairies supplying a small part of his output, certified to by the Commission. The plan of the Commission, its rules and regulations were carefully explained but nothing further was heard from him, but in a short while their advertisement appeared in the daily press of Certified Milk—certified to by his own Commission. Strange to relate he had obtained the co-operation of two reputable physicians, one a member of the County Society, neither however realizing the full extent of their action. It was easy to obtain the services of an unscrupulous veterinarian.

These physicians were paid $25.00 each for their first and only month's service.

Had the product put out as Certified Milk by this firm not been so grossly misrepresented in the firm's advertisements, we would perhaps have had more trouble in discontinuing their use of the term. They advertised that the milk was bottled at a certain dairy near the city, and without difficulty we learned that no milk had been bottled on this farm for several months.

Neither the Jefferson County Medical Society nor its Milk Commission are incorporated, hence have no legal status in court, but we had a most excellent State Pure Food law and an indefatigable worker in the Secretary of the Pure Food Department of the State Experiment Sation, Mr. R. M. Allen, who had spent several months investigating the milk situation in and about Louisville and was thoroughly familiar with it and with our work from its inception. Appealing to him, he at once said the practice of the private use of the term could be stopped under the pure food law, a section of which prohibits the sale of any goods which have been so advertised as to deceive and defraud the public, it being his intention to show in this case as a test what the term Certified Milk had become to be known in the minds of the profession and laity and that its use by private parties for commercial reasons only was misbranding and a strict violation of this section of the pure food law.

With his usual straightforwardness he went direct to the dealer and the private commission, warning them of the violation of the law and his intent to prosecute if it was continued. The dealer continued, a warrant was issued for his arrest; he was cited to appear in an honest magistrate's court and the evidence was introduced on the above lines, resulting in a fine of an amount which enabled the dealer to appeal to the Circuit Court which through his attorney he announced he would do.

In the Circuit Court at a later date the case was set for trial and the same sort of evidence introduced, the general acceptance by profession and community of the term Certified Milk. The judge at first was inclined to look upon the case as one of persecution, but after introduction of the evidence following a statement of the Commonwealth's contention the dealer was given his choice of a fine of $100.00, which gave him an opportunity of appeal or a minimum fine and promise to discontinue the practice of unlawfully using the term. He accepted the latter course, paying the minimum fine.

Believing a law in Kentucky similar to the New York statute would be a great help to our commission in preventing the use of the term Certified Milk; our Commission obtained the consent of the Experiment Station then drafting a new pure food bill, now recognized as a model law by all states, to the introduction of a clause making it unlawful for the term Certified Milk to be used by any but a milk commission regularly appointed by a County Medical Society.

This reads as follows:

An act for preventing the manufacture and sale of adulterated or misbranded foods, drugs, medicines and liquors, and providing penalties for violations thereof.

Be it enacted by the General Assembly of the Commonwealth of Kentucky:

Section 1. That it shall be unlawful for any person, persons, firm or corporation within this State to manufacture for sale, produce for sale, expose for sale, have in his or their possession for sale or to sell any article of food or drug which is adulterated or misbranded within the meaning of this act; and any person or persons, firm or corporation who shall manufacture for sale, expose for sale, have in his or their possession for sale or sell any article of food or drug which is adulterated or misbranded within the meaning of this act, shall be fined not less than ten dollars nor more than one hundred dollars, or be imprisoned not to exceed fifty days or both such fine and imprisonment. Provided, that no article of food or drug shall be deemed misbranded or adulterated within the provisions of this act when intended for shipment to any other State or country, when such article is not adulterated or misbranded in conflict with the laws of the United States; but if said article shall be in fact sold or offered for sale for domestic use or consumption within this State, then this proviso shall not exempt said article from the operations of any of the other provisions of this act.

Sec. 2. That the term food, as used in this act, shall include every article used for or entering into the composition of food or drink for men or domestic animals, including all liquors.

Sec. 3. For the purpose of this act, an article of food shall be deemed misbranded:

First. If the package or label shall bear any statement purporting to name any ingredient or substance as not being contained in such article, which statement shall not be true in any part; or any statement purporting to name the substance of which such article is made, which statement shall not give fully the name or names of all substances contained in any measurable quantity.

Second. If it is labeled or branded in imitation of or sold under the name of another article, or is an imitation either in package or label of another substance of a previously established name; or if it be labeled or branded so as to deceive or mislead the purchaser or consumer with respect to where the article was made or as to its true nature and substance or as to any identifying term whatsoever whereby the purchaser or consumer might suppose the article to possess any property or degree of purity or quality which the article does not possess.

Third. If in the case of certified milk, it be sold as or labeled "certified milk," and it has not been so certified under rules and regulations by any county medical society, or if when so certified it is not up to that degree of purity and quality necessary for infant feeding.

The new Pure Food Bill provides an annual appropriation of thirty thousand dollars for its enforcement, and will effectually and forever in Kentucky do away with this problem of the use of the term Certified Milk in any other manner except that outlined by our honored president who so wisely builded the first plan and so clearly looked into the future and foresaw the possibilities of the then untried scheme. The advantages of having the prosecutions for violation of the certified milk clause vested in the State Pure Food Commission or Experiment Station is manifest, as it has funds at its disposal sufficient to carry them through the courts and a corps of inspectors constantly on duty. A report from the commission of any violation of the law will be promptly acted upon by the Station. The Commission is in this way entirely relieved of any legal responsibility or worry.

The law in the State of New York is quoted as a model of what can be done along these lines.

"No person shall sell, exchange or offer or expose for sale, or exchange as and for 'certified' milk, any milk which does not conform to the regulations prescribed by and bear the certification of a Milk Commission appointed by a County Medical Society organized under and chartered by the Medical Society of the State of New York, and which has not been pronounced by such authority to be free from antiseptics, added preservatives, and pathogenic bacteria or bacteria in excessive numbers. All milk sold as 'certified' milk shall be conspicuously marked with the name of the Commission certifying it."

These remarks would be most incomplete without a reference, at least, to the work done by the Medical Commission of Cincinnati, and the great personal work of Dr. Otto P. Geier, their and our most efficient secretary, in obtaining the passage by the Ohio State Legislature of a bill preventing the feeding of distillery slop to dairy cows. This was a fight against organized capital and against great odds, yet it was won, the bill being passed by both branches of the Legislature by large majorities and signed by the governor. Dr. Geier and his associates are to be congratulated on this victory.

A bill drawn up by a New Jersey attorney is appended which will probably be introduced in the next legislature of that State.

An Act regulating the production, sale or exposing for sale of certified milk.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. No person shall produce, sell or expose for sale as and for certified milk any milk which has not been produced under the direction of a duly organized medical commission, having for one of its objects the control and production of milk intended for sickroom diet or infant feeding. Said medical commission is hereby authorized to take all necessary means to carry out the purposes of this act.

2. All milk produced, sold or exposed for sale and for certified milk shall conform to the State law with respect to solids and the addition of water or chemicals. All vessels containing milk produced, sold or exposed for sale as and for certified milk shall have affixed thereto the date of milking, and the name of the medical commission or association certifying to the same.

3. Any person who shall produce, sell or expose for sale as and for certified milk any milk which is not in fact certified milk produced under the direction of a duly organized medical commission, as in the first section of this act provided, shall for each and every offence be liable to a penalty of one hundred dollars, to be recovered in an action of debt, by any person who may sue for the same, said penalty when recovered to be paid to the overseer of the poor of the municipality where the offence occurred.

4. The medical commission mentioned in the first section of this act shall consist of not less than three nor more than twelve practicing physicians of this State, appointed by a county or State Medical Association, and practicing in any given county,

nor shall this act be construed to require any such medical commission to be incorporated under the law of this State, but any such commission or commissions may continue to exist or hereafter be organized, as a purely voluntary organization or association.

5. Any physician being a member of said medical association who shall accept any fee or reward for any services rendered under the provision of this act, shall be liable to a penalty of one hundred dollars, to be recovered by any person who sues for the same, in an action of debt, said penalty, when recovered, to be paid to the overseer of the poor of the municipality where the physician resides.

6. This act shall take effect immediately.

Estimation of Fat in Feces— The following is an abstract of a paper read at the seventy-fifth annual meeting of the British Medical Association on the above subject by I. Walker Hall, of Bristol, and refers to the estimation of the total quantity of fat evacuated. 1. Before and after administering a known quantity of fat, prescribe fluid extract of hematoxylin. 2. Transfer entire stools to mortar, add normal KOH solution, stir till all lumps are dissolved, add distilled water to make up 500 c. cm., and shake. 3. Heat 50 c. cm. for 20 minutes. 4. To this add 50c. cm. of 95 per cent. alcohol; heat for 20 minutes. 5. Add strong HCl until strongly acid. 6. Heat 20 minutes, filter, evaporate to 50 c. cm. 7. Take 5 c. cm. and determine percentage in a "milk" centrifugal tube, and multiply result by 5, or take 20c. cm. in a Schmidt-Werner tube and estimate; after calculation from the dried residue of the aliquot portion of the ethereal extract, multiply result by 25. If the process be interrupted at (3), then the amount of fat extracted approximates that of the fatty acids; this result deducted from the total amount equals that of the neutral fats present.—Canadian Pract. and Review, March, 1908.

PEDIATRICS AS TAUGHT IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.*

By W. C. Hollopeter, A. M., M. D.,

PROFESSOR OF PEDIATRICS IN THE MEDICO-CHIRURGICAL COLLEGE,
PEDIATRIST TO THE MEDICO-CHIRURGICAL, PHILADELPHIA
GENERAL, ST. JOSEPH'S AND METHODIST HOSPITALS

AND

H. Brooker Mills, M. D.,

LECTURER ON PEDIATRICS IN THE MEDICO-CHIRURGICAL COLLEGE,
ASSISTANT PEDIATRIST TO THE MEDICO-CHIRURGICAL AND
PHILADELPHIA GENERAL HOSPITALS, PHYSICIAN-IN-CHIEF TO THE NORTHWESTERN GENERAL HOSPITAL.

For a long time pediatrics has been regarded only as a foster child of medicine in many of our medical schools. Gradually however, it has grown to be a separate and distinct branch of clinical medicine and is so recognized in the larger schools. It has clearly demonstrated its right to be regarded as a distinct branch of clinical medicine because of its growing importance to society and its intimate relations with all sociological problems of family, school and the community.

It has also demonstrated its distinctive rights in the growing domain of preventative medicine, a branch of vaster importance to the plastic child than in adults; but the enlarging sphere of diagnosis and treatment in the child has demanded a higher grasp of imponderable therapeutics than is satisfactory to the adult.

---

*Read at the Second Annual Meeting of "The Association of American Teachers of the Diseases of Children," Chicago, June 1st, 1908.

Preventative and suggestive therapeutics finds its ideal realization in conducting a nursling to childhood and childhood to adolescence.

The feeding of children by artificial methods seems to have reached its acme of complexity and bewilderment. Volumes after volumes of embarrassing fullness have been offered annually to the gasping pediatrician, and of course each one claims to have solved the riddle and simplified the process, and the poor student was forced to parrot-like memorize more and newer complex formulae.

The whole truth of the feeding problem is crystallizing into shape, and while the percentage feeding is offering the basis for proper adjustment, the child is the final analysis and not the quality and quantity of food to be considered.

Among the institutions in the country to realize and recognize the great and growing necessity for a pediatric department that should be thoroughly equipped and up-to-date was the Medico-Chirurgical College of Philadelphia. However, it was not until recent years that the instruction on this subject was viewed with any degree of importance by the student, largely because of the fact that an examination—although required—was not given the importance of the major subject, and therefore a man's graduation could not be interfered with by his failure to pass his examination in pediatrics. Among the first principles observed was the separation of the children's department from the adult in the hospital proper and at the present time the Medico-Chirurgical College of Philadelphia is making arrangements to formally open one of the best children's departments in the country in a building entirely separate and distinct from all the other hospital and college buildings of the institution, except the Maternity Department which occupies the lower floors of the building of which the pediatric department will use the upper floors and the roof garden, the latter now a well recognized necessity for all institutions, particularly in the treatment or respiratory affections. With the opening of this new building will come a more complete and thorough division and isolation of pediatric cases, it being possible to have private rooms, private and semi-private wards, general wards, isolation, quarantine and observation quarters, and as important as anything else, the separation of medical diseases of children from the surgical and special affections of childhood. With the material thus divided and segregated owing to the excellent arrangement of the building, the proper study of pediatrics will not only be made easy for the students and their instructors but the treatment of disease will be rendered equally easy for the physicians and nurses.

It is furthermore the intention to so keep the records of the work done in this department, that it is believed much valuable information in tabulated statistical form will always be at hand with which to instruct our students and publish our results. At the present time the curriculum of the Medico-Chirurgical College calls for one didactic lecture per week to the junior class during the entire college session, totalling about 30 hours and an examination on the subject at the end of the term. The course of lectures delivered during previous years covered a weekly lecture for three months on percentage feeding and milk modification, together with a full discussion of the following diseases taking up the definition, etiology, diagnosis and prognosis, treatment, sequella, complications and differential diagnosis of each—measles, scarlet fever, chicken-pox, diphtheria, whooping-cough, mumps, tonsillitis and diseases of the mouth.

During the year occasional quizzes are given on the subject by the lecturer on the subjects thus far covered, and it is believed that the following out of these procedures, with perhaps some further development will equip the members of the junior class to enter the senior class with a good fundamental knowledge and ground work on the subject of pediatrics.

As for the senior class the course consists of:

1. One clinical lecture per week throughout the entire term, totalling about 30 hours at each of which several cases either of the same or different diseases are shown, the diagnoses are made for the class and the treatment is started.

At the subsequent clinics these subjects are brought back for further study and in order to observe the results of treatment.

Some of the cases shown at these clinics are from our own wards in the hospital while others are brought in from the pediatric dispensary; so that both acute and chronic conditions are studied under the most favorable circumstances, and practical demonstrations are made of the methods to be employed to most effectually handle a sick child. Some of these clinical lectures are given in the form of a didactic lecture at which time no patients are shown, and such subjects as the physiognomy of disease, the therapeutics of disease are discussed in detail. The employment of X-ray pictures, electricity, etc., on cases between clinics, enables the study of each case to be most complete and, to add greater value to each case, reference of the patient to other departments for surgical or orthopedic attention, etc., is advised. The reports of these departments being read in the clinics have been found very valuable.

2. The class is divided into sections of ten men each, and each section is taken to the Philadelphia Hospital, where there may be found at all times a wealth of pediatric material, for six ward classes, two each week, for three weeks, on Mondays and Fridays. These ward classes are in charge of Dr. James D. Brittingham and Dr. Ralph H. Spangley, who take the section to the bedside and use the patient for purpose of demonstration, calling upon each man to make a part of the physical examination, questioning them fully as to their knowledge of the disease under observation and inviting discussions and questions from every member present, not only as to the diagnosis but as to the proper treatment to be employed. Interesting cases are studied several times during the course of the six visits of each section, so that the disease may be followed frequently throughout its entire course up to recovery or post-mortem.

By this method every student of the senior class receives six hours practical bedside instruction at the Children's House of the Philadelphia Hospital.

3. In addition the class is also divided up into sections of ten for the purpose of holding a clinical conference on pediatrics in our own wards at the Medico-Chirurgical Hospital for one hour once a week for three weeks to each section. This con-

ference practically takes the form of a combination ward class, quiz and clinic. (This conference is under Dr. Mills).

4. A pediatric dispensary under the charge of Dr. N. Francis Brecker is operated in conjunction with this department, and it is not at all unusual for 150 cases showing almost every possible disease of childhood to be treated in this dispensary in a month. This material the senior class may make use of by visiting the dispensary if they so choose, and in addition many of these cases are used at the weekly clinics and likewise many are demonstrated at the weekly conference already referred to.

5. Occasionally during the college session and frequently towards the end of the term, pediatric quizzes are held for the benefit of the senior class at which all subjects covered at the clinics are reviewed, and all important diseases are especially dwelt upon from a diagnostic and differential diagnostic point of view.

6. The affiliation of members of the teaching staff with other hospitals, places still more valuable material at the disposal of the teachers for demonstrative and lecturing purposes, and any of the students who so will may at any time visit these institutions for the purpose of study and observation. At the end of the term an examination on pediatrics is held, covering all subjects touched upon during the course of clinics and also such other subjects as may have been gone over during the junior year, particularly percentage feeding and milk modification and such other diseases of childhood as it is considered essential and necessary for a man to have more or less knowledge of in order to intelligently practice the art of pediatrics. It will be seen therefore that the junior class is given in the neighborhood of thirty didactic lectures per session in addition to some quizzing. The senior class is given an equal number of clinical lectures in addition to six ward classes and three clinical conferences for each man, a total of about 40 hours per session, quizzing, and the opportunity of visiting the dispensary and other hospitals. This amount of instruction if supplemented by a moderate amount of conscientious reading on the part of the student should as thoroughly equip each man for the practice of

pediatrics as he is now, and for many years has been, to practice medicine and surgery. With the increased facilities which the Medico-Chirurgical College will have with the opening of the next college term, still more time will be devoted to the study of this subject in a practical way at the bedside, and it is the intention of the faculty of the college to give this department every facility for development and to place within reach of the student body as thorough and complete a course, not only as is given on other major subjects, but also as is given in any other institution in the country.

This fall the juniors will cover the physiology of childhood —including the anatomy and hygiene of children, and the examination on the same. The seniors will limit themselves to the pathology of the child, and in this way we complete the gradation of the subject.

The Bacteriology of Scarlet Fever.—(Lancet, April 4, '08) —As the result of an investigation of the organisms present in the throats, etc., in 160 cases of scarlet fever at the Bury and District Joint Hospital, Kerr concludes that in the present state of our knowledge of the etiology of the disease Gordon's tests must be regarded as of little value. If the tests are of real differential worth for the various strains of streptococci—and the remarkable constancy shown by different generations of individuals to them, in his experience, indicates that they are—we find ourselves confronted by the fact that they fail absolutely to point to any particular strain as being even more frequently present in scarlet fever than in any other catarrhal and inflammatory condition of the throat. That the infecting agent is present in the pharyngeal and faucial mucous membrane is absolutely all that has been certainly established regarding the causation and source of the disease. If none of the streptococci in the throat are causative of the primary conditions,, some other agent must have made it possible for them to obtain entrance to the tissues in order to produce the secondary complications. It is shown that the staphylococci are relatively increased in scarlet fever. Possibly a careful examination of these, on similar lines to that described for the streptococci, might reveal something of importance.—Jour. A. M. A., May 2, 1908.

REPORT OF THE COMMITTEE ON THE INSPECTION OF HERDS AND FARMS USED FOR THE PRODUCTION OF CERTIFIED MILK.*

By Leonard Pearson, Chairman.

The occasion for the inspection of herds and farms used for the production of certified milk is to insure the installation of equipment and the establishment of conditions and methods that will make it possible to produce clean, wholesome milk, and to see to it that these conditions and methods are so firmly based as to render it improbable that they will break down under ordinary strain, and will withstand extraordinary strains to the maximum extent. In order to produce milk of the grade of certified milk reliably, from day to day, it is necessary that the work shall be done under good conditions, and these should be so firmly established and so carefully regulated as to furnish high assurance that harmful contaminations will not occur. This means that there shall not only be good construction and equipment on the dairy farm, but that there shall be efficient administration and a systematic arrangement of the work of milk production so that it will be carried along in safe channels. Fairly clean milk, indeed, very clean milk, may be produced under unfavorable farm conditions but only at the cost of an infinite amount of oversight and work that would be unnecessary if the facilities were better; and when this scrupulous oversight is for a moment relaxed, contaminations occur.

Certified milk must not only be pure but it must be so produced that harmful contaminations are improbable. The situation may be compared to that governing the purity of a water supply. Water from a certain well or spring may be found, upon analysis, to be of high purity but the lay of the land may be such as to render it easy for the source to become contaminated by noxious surface drainage. In such a case, the water supply could not be approved, even though the water itself were of remarkable purity at the time of examination. Similarly, with regard to certified milk; it is not enough to know that the milk responds satisfactorily to chemical and bacteriological examinations; it must be known that the conditions on the farm are such as to render pollution or infection difficult and improbable. The necessity for this lies in the facts, first, that certain dangerous infections are not discoverable by routine laboratory examination; second, laboratory examinations are made only occasionally, and cover but a small fraction of the supply from the farm and, third, the results of laboratory examinations are not available until after the milk represented by the sample examined has been consumed.

---

*Read at the Second Annual Conference of the American Association of Medical Milk Commissions in the United States, Chicago, June 1, 1908.

Certified milk cannot be regularly examined for diphtheria, typhoid or tuberculosis infections. Protection against these diseases must depend on knowing that the milkers and dairymen are healthy, that the water supply of the farm is pure, that the bottles are sterilized, and that the cows are healthy. If the laboratory examinations are made but once a month, harmful conditions might exist for all of this interval, if there is no control beyond that furnished by such examinations.

The *continuing* protection of the milk supply must come from the establishment of satisfactory conditions at the seat of production. Laboratory examinations furnish an indispensable guide as to the way in which the required precautions are being carried out, and furnish indications for the removal of faults.

The herd and farm inspections should be comprehensive; they should cover the state of health of the cows, herd hygiene, the sanitation of the buildings and premises, the care of utensils, the farm and dairy methods and practices and inquiries regarding the health of the stable men, dairymen, milkers and their families.

In relation to the health of the cows: there are many things that are of importance. Some medical milk commissions appear to be satisfied with little evidence on this line beyond that furnished by a tuberculin test, repeated at long intervals. This is far from sufficient.

All diseases of the udders of cows are of importance. There are several forms of garget resulting from infections of different kinds. Streptococcus garget is the most common. Other infections of the udder are caused by staphylococci, colon bacilli, tubercle bacilli, the bacillus necrophorous and the undetermined virus of cowpox. Certain intestinal diseases of cows, accompanied by diarrhoea, may lead to the infection of milk as it is being drawn. Suppurative and putrefactive conditions of the genital passages, as in vaginal and uterine catarrh, or in retention of the afterbirth, may lead to the infection of milk. Cows in these conditions should be excluded from milking herds. Herds that are infested by contagious abortion and herds in which diarrhoea often occurs are not suitable for the production of certified milk. If the so-called calf cholera exists on the premises it is important that stringent precautions shall be taken to prevent milk contamination.

The practice of permitting calves, or any animals other than healthy milch cows (and a bull, if desired) to occupy stables used for the production of certified milk, is unjustifiably risky and is to be condemned.

IN REGARD TO TUBERCULOSIS: There is now such an accumulation of experiences in the control of this disease as it occurs among cattle, that there need no longer be any doubt as to the procedures that are desirable and necessary. It has been shown that cows having no external signs of tuberculosis, but which have reacted to tuberculin, may eliminate tubercle bacilli either through the udder, the air passages or with the faeces, and that milk furnished by such cows may contain tubercle bacilli in sufficient numbers to infect experimental animals. Therefore, if milk is to be kept free of tubercle bacilli, it is necessary that all of the cows in the stable in which certified milk is produced shall be free from tuberculosis.

The question as to whether tuberculosis of cattle is transmissible to man need not be considered in detail in this report. It is sufficient to say that the milk of herds in which there are some tuberculous cows is capable of infecting swine, calves and other experimental animals fed upon it. It is established that the type of tubercle bacillus that occurs in cattle is virulent for man. In view of these facts, it is believed that no precaution should be omitted to exclude cows affected with tuberculosis, in any degree, from herds producing certified milk. So long as there is any reason to believe that tuberculosis is transmissible from cow to man, the consumers of certified milk are entitled to a product that is free from suspicion of infection from tuberculous animals.

The most accurate method that is known for the diagnosis of tuberculosis in cattle is the tuberculin test. Instances wherein tuberculin, when properly used, produces a characteristic reaction in non-tuberculous cattle are so rare as to be of no practical importance. On the other hand, some cows with very advanced tuberculosis do not react to the tuberculin test and some cows develop immunity to the action of tuberculin from repeated injections at short intervals. Cows but very recently infected with tuberculosis may not react to tuberculin. All of these points make it necessary that tuberculin shall be used with skill and discrimination; and when so used it may be depended upon to a remarkable degree.

The following method for the use of tuberculin is recommended: Each cow that is to be tested shall first be subjected to a careful physical examination. At least three preliminary temperature measurements, at intervals of not less than two hours, and preferably longer, should be made before tuberculin is injected. If, however, the temperature is normal, two preliminary measurements may suffice. Tuberculin of known reliable quality shall be used. The injection should be made in the evening, between the hours of 6 and 10. Eight or nine hours after the injection of tuberculin, temperature measurements shall be resumed and shall be continued at regular intervals of two or three hours until at least sixteen hours after the tuberculin was injected. If there is *any* upward tendency of temperature at the end of this time, temperature measurements shall be continued. A rise of temperature of two degrees F. to 103° F. or more, shall be regarded as a reaction, or as sufficient to justify the isolation of the cow. If there is doubt as to a result, the cow may be retested after a period of not less than six weeks. For retest, after this interval, at least three times the usual dose of tuberculin should be used.

Cows purchased for addition to the herd must be tested with tuberculin. After having satisfactorily passed this test the newly purchased cows shall be kept apart from the old herd for a period of three months, when they shall be tested again with two or three times the original quantity of tuberculin. During this period of isolation the milk from the new cows may be used as certified milk, provided the cows are in good physical condition, as determined by careful physical examination, and all other conditions are complied with. After having passed the second test, the cows may be admitted to the herd. The reason for this double testing is that a cow in what may be termed the incubative stage of tuberculosis may not react to tuberculin, but if admitted to the herd she might develop into a source of danger for the other cattle, and the milk.

If the herd used for the production of certified milk is found, upon tuberculin test, to contain some tuberculous cattle, these infected cattle should at once be removed from the dairy premises, and the stable and the surfaces of the remaining cows should be disinfected. The herd should be retested after six months and tests should be made regularly every six months so long as any tuberculous cows are discovered in the herd. When there are no reactions to tuberculin among the members of the herd, subsequent tests may be twelve months apart.

By these means, a large number of herds have been freed from tuberculosis and for years have been kept free from infection.

Adequate measures must be taken for the maintenance of the general health of the herd and for the sanitation of the premises. It is necessary that the stable shall be one that will harbor cattle comfortably and that may easily be thoroughly cleaned; it must have an impervious floor, smooth walls and a tight roof or ceiling. There is no objection to the storage of forage above the cow stable, provided there are no openings from the stable into the forage loft; the contents of the loft must be discharged into a separate room, apart from the stable. A stable must be well lighted and well ventilated. A stable with an excessive amount of glass windows is likely to be cold. Water from the atmosphere of the stable condenses on cold walls, leading to the growth of moulds and rendering the stable insanitary. This is less likely to occur if the walls are insulated and the stable well ventilated. Artificial heating and very expensive construction are unnecessary.

The farm inspector must pay attention to the routine of the stable work, feeding, watering, cleaning of the cattle, cleaning the stable and milking. If the cattle are milked in the stable and not in a separate milking room the stable should not be mucked out in the morning until after milking, otherwise a sufficient time will probably not be allowed between mucking out and milking, and the dust in the air will lead to more contamination of milk than results from the presence of manure in the trenches.

The character of the water supply must be considered, not only with relation to that used in the dairy house, but also with relation to that used in the stable, and cattle should not be pastured where they may enter a polluted stream.

The condition of the utensils, and especially the condition of the sterilizer, the milk coolers, the milk bottlers and the bottles should be examined at the times of farm inspection. There have been several instances of contamination of milk by a leaky cooler. The method of cleaning utensils should be investigated systematically. Care should be taken to insure the methodical and faithful carrying out of established regulations in regard to cleaning cows before milking, washing hands, wearing clean outer garments, the use of the hooded or small top milk pail, discarding fore milk, etc. Facilities that conduce to the convenient enforcement of these necessary precautions must be provided, and must always be kept in good working order.

The work in the stable and in the dairy house should be planned, and thoroughly explained to all who have part in it, so that, as far as possible, it may be carried out in the same manner daily, and develop into established routine. All of these matters should be supervised and controlled by the veterinarian or other expert appointed by the milk commission.

Every farm upon which certified milk is produced should be provided with a building or place where diseased or suspected cows may be isolated. Facilities for this purpose should be outside of and apart from the stable of the milking herd, and preferably apart from stables for other cattle. The isolation stable should not, however, be so far away from the other farm buildings as to make it difficult of access, for this has been found to lead to the neglect of the animals stabled there. Animals which develop an infectious disease—as tuberculosis, abortion, cowpox, streptococcus garget, septic conditions, etc.—or cows with other illness—as severe indigestion or diarrhoea, vaginal catarrh, foot-rot, wounds, persistent cough, etc.—should be removed from the milking herd and isolated until they can be examined by the veterinarian. There must be other, separate, facilities for the isolation of cows at calving time.

In order that suitable supervision may be kept over the health of the cattle and over the other factors that have been referred to, it is believed that the veterinarian's visits should be made as frequently as possible, and that the interval between visits should in no case be greater than four weeks.

A score card has been proposed for use in indicating the degree of perfection that has been attained in relation to the various factors that contribute to the protection of milk from contamination, and such score cards are now in successful use in some places. They are of service in helping to draw attention to the weak points of an establishment and they furnish a ready means of keeping records and of instituting comparisons between different establishments and of the condition of the same establishment at different times. The score card which has been presented to this association appears to approximately cover the essential features of such a scale and record.

Leonard Pearson, Chairman.
Samuel McC. Hamil.
A. R. Ward.

Tracheal Diphtheria with Recurring Formation of Pseudo Membrane—H. Herzog. (Deputsche medizinische Wochenschrift, No. 20, 1907)—The author had occasion to observe three times in a severe case of diphtheria "ecouvillonnage" of the larynx. In 1896 Variot and Bayeux described under the term "ecouvillonnage," a new procedure in the treatment of laryngeal diphtheria.

The method consists in the passing of the tube, just as in the ordinary intubation. The tube which loosens the membrane clinging to the walls of the larynx and trachea, is removed in a few minutes, and the detached membrane is coughed out.

In the following case described by the author, the patient coughed out the tube with a membranous cast of the trachea three times.

J. B., aged two and three-fourth years. Had measles four weeks before coming under the author's observation. Coryza and a hoarse cough for a week, with suffocative attacks for several nights. On examination, an extensive membrane was observed on both tonsils. The nose was clear. Intubation was performed within a half hour after the patient was admitted to the hospital. The tube could be easily introduced, but was coughed out after a few seconds, covered with a membrane which covered it like the finger of a glove. The membrane showed the impressions of the tracheal rings. Ten hours after the first intubation, urgent symptoms demanded a second one. The tube was again coughed out at once, and was covered with the same kind of membrane. Fourteen hours later another intubation had to be performed and the same thing happened. The same tube-like membrane was coughed out. The future history of the case is of no great interest. The patient made a complete recovery.

The use of antitoxin did not prevent the regeneration of the membrane in the trachea which occurred twice in twenty-five hours, but the ease with which the membrane was thrown out was undoubtedly due to the action of the serum.—Albany Med. Annals, April, 1908.

AMERICAN PEDIATRIC SOCIETY.

ANNUAL MEETING, HELD MAY 25, 26, 27, 1908.

THE PRESIDENT, DR. CHARLES GILMORE KERLEY, IN THE CHAIR.

THE TWENTIETH ANNUAL MEETING OF THIS SOCIETY WAS HELD
AT THE WATER GAP HOUSE, DELAWARE WATER GAP,
PENNSYLVANIA.

THE SERUM TREATMENT OF CEREBRO-SPINAL MENINGITIS.—Dr. Simon Flexner of New York read this paper. He expressed his appreciation of the invitation to be present and said that he would present some of the statistics that he had recently collected in regard to the treatment of cerebro-spinal meningitis by antimeningococcic serum. The serum had been in use for about a year in this country and for a shorter time in Great Britain. His remarks were based on experience acquired with less than 400 cases of epidemic cerebro-spinal meningitis. They had diagnosed cases in which the serum was used both bacteriologically and clinically. During the course of the year the method of application of the serum had been somewhat modified and they now gave larger and more frequent doses than at first. The statistics for the last six months gave more recoveries than those for the first six months of the year. The fact that the serum was more widely known, more generally used and used earlier might account for the larger percentage of recoveries. The question as to whether the serum was useful early or later, in the same or different degrees, was important. The serum belonged to the bacteriolytic sera. It had a small capacity for neutralizing and its pure antitoxic value was probably not great. The serum exerted a distinctly injurious effect upon the vitality and viability of the meningococcic germs in the cerebro-spinal canal, and these microorganisms would not grow in the canal after injecting the serum. Dr. Flexner said that he based his remarks on 322 cases of this disease that had been treated with the serum both here and abroad. Two hundred and forty-seven of these cases were treated in this country and 147 recovered, while 68 died. This was a mortality of 27%. These were not selected cases; some were late and very desperate and some were mild. Those that came under treatment the third week were very unfavorable and the mortality was greater. One or two injections sometimes produced striking results, even in cases that seemed to be desperate or hopeless. Thirteen of the 247 cases were under one year of age and of these five died and eight recovered. This was a mortality of 37.5 per cent. There were 26 cases between one and two years of age and these too, had a mortality of 37.5 per cent. Of 45 cases between two and five years of age 22 per cent died. The mortality between the ages of five and ten years was 11 per cent. Between the ages of 10 and 20 years there were 57 patients with a mortality of 28 per cent. There were 44 patients over the age of 20 years with a mortality of 45 per cent. The average case recovered gradually, though he had been struck in noting the effect of the serum with the remarkable abruptness with which some cases terminated. This was what he referred to when he said that a case ended by crisis. There were 75 cases collected in Great Britain which showed a mortality of about 30 per cent. The histories sent him showed that the periods of active disease varied with the first injection of the serum, but was usually about two weeks.

A few cases terminated in from three to five days. While the serum influenced the clinical course of the disease markedly he was unable to say just how it acted.

THE DIAGNOSTIC VALUE OF CHEMICAL AND BACTERIOLOGICAL EXAMINATIONS OF CEREBROSPINAL FLUID.—Dr. Alfred Hand of Philadelphia said that by means of lumbar puncture an exact diagnosis could be made. Typical cases showed well-marked findings. A milky, opalescent fluid which became clear as the fibrin net-work formed and contained a great increase in the amount of albumen, with sugar slightly below normal, and with mononuclear leucocytes and tubercle bacilli, was clearly tubercular meningitis. The diagnosis of cerebro-spinal meningitis would be established if the fluid was of a light yellow tint, turbid, with an abundance of polymorphonuclear leucocytes, some of them containing diplococci in their protoplasm. After the net-work had formed the fluid showed a moderately increased amount of albumen and entire absence of sugar. If the fluid was very similar to this with a slightly greenish yellow tint similar to streptococcic or staphylococcic meningitis but with hardier diplococcus the diagnosis of meningococcic meningitis was made.

HYDROCEPHALUS OF MENINGOCOCCIC ORIGIN, WITH REMARKS ON THE SERUM TREATMENT.—Dr. J. Mason Knox, Jr., and Dr. Frank J. Sladen, of Baltimore, presented this paper. They said that there were very few of these cases reported in literature. The character of the symptoms seemed to change with the onset of hydrocephalus and the clinical picture was, in many instances, not recognized. They reviewed a number of cases following meningitis, in many of which mental impairment was noted. They reported two cases treated during the fall and winter. The first case was a child of five months who had been perfectly normal until two months of age when, after general convulsions, and a marked gastro-enteritis, which lasted seven weeks, retraction of the head was noticed and the typical pressure symptoms of meningitis were found to be present. The fontanelle bulged and the bones of the skull were separated and the sutures gaping. One hundred cc. of turbid fluid was removed and at the end of a week a second puncture was done. The family refused to have the serum tried and at the end of a few weeks the child died. Autopsy was refused. The second case was a child of six months who was markedly emaciated, with retracted head and bulging fontanelles. There was no history to account for the condition. The case did not seem to be one of typical hydrocephalus and a brain tumor was suspected. Ventricular puncture was done and a large number of meningococci were found in the fluid. Five ventricular punctures were made. The child finally collapsed and died. As a result of the serum treatment there was a lessening of the number of cases of hydrocephalus. Two other cases were reported, one of a boy of fifteen years and one of a child of seven. In these cases the serum was used and both recovered, though the boy of fifteen had marked strabismus and otitis media and paranentesis was done on both membranes. Before the present year they had had 33 cases with a mortality of 64 per cent. During the last four and one-half months they had had 21 cases which had been treated by lumbar puncture and intra-spinal injections with a mortality of 14%. The cases that died were of very virulent type. Most of the cases were temporarily upset by the injection of the serum.

THE SERUM TREATMENT OF CEREBRO-SPINAL MENINGITIS, WITH A REPORT OF CASES.—Dr. Charles Hunter Dunn of Boston reported a series of 40 cases which were treated by serum injections. All cases in which the diplococcus was found were included without regard to type. In all cases the serum was injected into the cerebro-spinal canal. The serum was used at once if the fluid was cloudy, and lumbar puncture was done as soon as suspected case was reported. In relapsing cases more than one injection was given. The injections were repeated until the nervous and subjective symptoms were relieved or four injections had been given. The routine amount given was 32 cc. The maximum was 45 cc. There were 40 cases in all, of which 9 died and 31 recovered. All types were included in this series. Three of the cases were fulminating in type. The serum produced marked and striking effects in some cases entirely modifying and changing the course of the disease. The rigidity of the neck and Kernig's sign were very persistent. In 18 cases there was immediate relief but in five there was no improvement. There were invariably a fewer number of organisms in the fluid after one injection. After the fourth injection no organisms were seen. The injections were repeated in all relapsing cases. The mortality when the serum was used during the first week of the disease was 8 per cent.; after the second week, 77 per cent.; after the third week all died.

THE SERUM TREATMENT OF EPIDEMIC CEREBRO-SPINAL MENINGITIS (11 cases).—Dr. F. S. Churchill of Chicago reported these cases which were meningococcic in type. Four of the eleven cases died. One girl of sixteen years was brought into the hospital in a moribund condition on the tenth day of the disease. A man of 25 years who was brought in on the fifth day of the disease was not affected at all by the serum. He related the histories of all the cases that recovered. From these cases it was observed that there was a general improvement following the administration of the serum. The improvement usually followed after the second or third dose. The improvement in the mental condition was especially marked. There was a decided drop in the number of leucocytes in the fluid at the time of the second, third or fourth injection. There was also a drop in the number of diplococci. Two of the patients had sequellae. It was obligatory to do a lumber puncture if one had a case of meningitis. The serum could be injected at once and the form of meningitis that one was dealing with determined later. It was important to reduce the dosage until good results were obtained.

OTHER METHODS OF TREATMENT COMPARED TO THE SERUM TREATMENT OF CEREBRO-SPINAL MENINGITIS.—Dr. Henry Koplik of New York said that in the consideration of the various methods of therapy they had lost sight of the natural course of the disease. This disease resembled pneumonia very closely in its behavior. In sporadic cases they seldom met with the severe symptoms of the disease. In this form lumbar puncture rarely revealed a purulent fluid at the onset. In the sporadic cases they had succeeded in saving life by the simple lumbar puncture. In 1899 they had begun to treat meningitis by the lumbar puncture as often as the proceeding was warranted. In the sporadic cases they had succeeded in saving life by this procedure. In 1899 they had eight cases of the meningococcic type. During 1901 and 1902 and 1903 they had 13 cases. This made in all 21 sporadic cases. Two of the infants below one year of age died. In the epidemic of 1904 there were 39 cases. Considering the patients below two years of age the mortality was 50%. Twenty-three cases of cerebro-spinal meningitis treated by the serum therapy whose ages varied from three and one-half months to five and one-half years. Three were under one year of age and three were two years or younger. From 100 to 125 cc. of serum was administered.

DISCUSSION.

Dr. L. Emmett Holt of New York stated that, during the epidemic of 1904, statistics were collected of 2,350 cases of which the mortality was 75%. These were all non-serum treated. In cases that recovered the duration of the disease was five weeks or longer in 50% of 350 cases. He had had one child of five months get well under the serum treatment. The reports of the results of serum seemed to him to be very encouraging at present.

Dr. Thomas Morgan Rotch of Boston said that he had watched these cases and doubted the wisdom of speaking of epidemic and sporadic cases. Cases did not differ in any essential way, except in type. All courses of treatment had been tried in their wards and they had concluded that it was absolutely safe to give injections. This information was important as the disease was too serious to admit of delays. Lumbar puncture certainly did good temporarily as it relieved pressure. By this measure the number of invaders was diminished though there were still a large number remaining to do damaging work. Vaccines might be of some help but not so much as the serum. They raised the opsonic index. He agreed with the other speakers that the dose might be repeated and in some cases even twice in twenty-four hours. Immediate relief was sometimes given in cases where the child was practically dying. He thought that by pushing the treatment some of the sequellae might be avoided. The youngest case he had seen was twenty-four hours old and died the second day.

Dr. Frank J. Sladen of Baltimore said that in 21 cases in Dr. Barker's Clinic the effect had been about as described by Dr. Churchill and Dr. Dunn. After a rapid drop in the temperature there was usually a rise, and a second or third injection was needed. In three fatal cases the temperature did not rise again. They had found Kernig's sign most persistent. There was a positive increase in the polymorphonuclear leucocytes after the first injection. This had also been observed in other forms of meningitis. In six cases of tubercular meningitis the typical fluid changed to a turbid one with polymorphonuclear increase. In pneumococcic meningitis there was no effect produced by the serum so far as they had observed. The extra-cellular organisms found in the first specimens were inter-cellular in subsequent ones. The bacteria were destroyed and in some instances there was no growth after the first injection; in some cases the number of colonies was diminished. The rapid disappearance of symptoms justified the idea of an antitoxic property in the serum.

Dr. A. Jacobi of New York said that he had no practical experience with the serum treatment of cerebro-spinal meningitis. He raised the question as to whether anything could be done for those cases with a subnormal temperature. In other septic diseases a subnormal temperature was usually associated with complications. There was a question as to whether this subnormal temperature was not due to a complication that we did not understand. Some cases of diphtheria not helped by antitoxin were affected by alcohol. Perhaps some of these cases of meningitis needed stimulation.

Dr. John Lovett Morse of Boston said that his experience had not been as extensive as some of the others so far as the serum was concerned. When he saw the organisms inside and outside the cells and then after one injection saw no organisms outside and a diminished number inside the cells, he could not doubt the efficiency of the treatment. He thought whenever one suspected cerebro-spinal meningitis it became a duty to puncture. The presence of the meningococcus was an indication for the use of the serum. If the fluid was turbid one should give the injection without waiting to find the germs. He questioned the advisability of introducing as great a quantity as one had withdrawn.

Dr. W. W. Wilkinson of Washington said that at the Garfield Hospital they had had 10 cases with seven recoveries and three deaths. One case that was in a comatose condition upon arrival improved after the injection of the serum, but intestinal paralysis set in and he died. Another fatal case had chronic hydrocephalus on admission to the hospital. The third case he thought ought not to have proved fatal. Only one injection of 15 cc. was given. The child improved and the dose was not repeated. The organisms reappeared and the child died. The best results had been obtained with one injection of 15 cc. or two of 30 cc. on successive days. Four cases recovered with only one injection of 15 cc. The bad symptoms subsided four or five days after the first injection, but the cases lasted about fourteen days. Of the cases that recovered three had sequellae; one lost an eye, one was deaf and one had impaired mentality.

Dr. Samuel S. Adams of Washington said that while clinical observation might not be of much consequence the results of clinical observation were of great importance. From the results reported it seemed that this method of treatment might do away with some of the sequellae that we could not avoid with other methods of treatment. He had had a limited experience with the serum but thought there was proof enough presented to encourage further use of this method. It had given better results than any method tried within the last three decades.

Dr. Charles G. Kerley of New York said he thought this had been one of the most interesting sessions in the history of the society. He hoped that the good reports would continue and that we would not wake up to find the hopes held out more or less of a dream.

Dr. John Mason Knox, Jr., of Baltimore said that the clinical value of the serum had attracted more cases to the hospital than usual, and he thought that this fact should be emphasized.

Dr. Charles Hunter Dunn of Boston said that he was interested in what had been said regarding the injections causing pain. He had had two patients who had complained of pain in the back of the legs and knees. In these two instances he had neglected to warm the serum and he did not know whether that had anything to do with causing the pain or not. He did not mean to say that all cases with subnormal temperature died. He had had one case recover after an illness of seven weeks. When cases passed over the period of active symptoms and fever and then went into a state of unconsciousness with a subnormal temperature they were of unfavorable type.

Dr. Henry Koplik said, in closing the discussion, that we should not puncture except on indication. The object was not only to relieve pressure but to affect organisms. He did not see why one should introduce as much fluid as had been withdrawn, because there had been an abnormal amount of fluid present. If a child was doing well he thought it needless therapy to puncture again immediately.

Dr. Simon Flexner, in closing the discussion, said that he agreed with Dr. Koplik that cerebro-spinal meningitis was a very variable disease in different localities and in different seasons. He had obtained his best statistics from Belfast where there was an epidemic. Cases treated outside the hospitals there did not do as well as those treated within. He said that the serum belonged to class of bacteriolytic sera in which we were obliged to use the antitoxic properties of the bacterial organisms. We knew three antitoxic bacterial sera, diphtheria, tetanus and dysentery. One could give an animal any amount of one of these and if a corresponding amount of the antitoxin was administered the animal would be saved. If one multiplied the toxin and the antitoxin equally one got neutralization, but this was not true of the meningitis serum. If one attempted to use a serum of this kind subcutaneously one must remember that a great deal depended upon concentration. He believed that success had been achieved because the antitoxic substance was brought into contact with the focus of the disease. The fact was to be emphasized that the serum must be in a certain state of concentration and made directly into the spinal membranes. If some such means of treating pneumonia could be devised it should be tried. The reason we had failed with sera was because we had tried to reach local processes by putting the sera into the general circulation. This was not the way. It was all right in diphtheria because here we had a poison that attached itself to the individual cells.

(To be continued.)

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Program Arranged by Section on Pediatrics.

DR. A. D. SMITH, CHAIRMAN.

JUNE, 1908.

I. "THE CORRELATION OF PHYSIOLOGY AND INFANT FEEDING."—By Joseph E. Winters, M. D., of Manhattan. The mortality and morbidity in breast fed infants in the hovels and huts of the poor is as low as among the best families. A child who is nursed by a healthy mother is almost certain to escape the digestive disorders of infancy. Hence, in making an artificial food, mother's milk should be our pattern. Mother's milk contains 5% fat, 7% milk sugar, and 1.1% proteid. The proportion of fat constantly increases during lactation. The most vigorous infants are nursed with mother's milk rich in fat. The child strips even a higher percentage of fat from the breast than is shown by analysis; that is, probably 6-7% in the best cases. Fat is paramount as a source of heat, and an infant loses proportionately 1-3 more heat by radiation than the adult. The infant's tissues contain large amounts of fat, especially the nervous tissues and the bone marrow, the latter consisting of 96% fat. These facts show that fat is a necessary constituent of infant feeding, and they show the fallacy of a fat free diet. When the mother's milk is low in fat, the child is always thin, anemic, inanimate, with depressed fontanelle.

In natural milk, each fat globule is surrounded by a ring of proteid, which adheres to it. When cream is centrifugalized, the cohesion between the fat and the proteid is destroyed, so that "separator" cream is not nourishing to the infant, as natural cream is.

Casein forms 2-3 of the albumin in woman's milk, and 4-5 of the albumin in cow's milk. This difference in proportion of casein is responsible for the difference between the curds of cow's milk and those of woman's milk. If we compare the action of an acid on diluted woman's milk with its action on diluted cow's milk, we see the contrast between the light flocculent curds of the former and the large curds of the latter. If we continue our experiments, using less and less of the top milk, we find that only when we use the *upper half ounce* from cow's milk *sixteen hours old,* do we get a milk which behaves physically like mother's milk.

Never give water from a bottle to a new born infant, it will surely stop its nursing. If necessary, give a little water by the spoon. Put the child to the breast as soon as possible after birth, and insist on every mother nursing her child. The colostrum of the first three weeks is very important for the child, and we have no substitute for it. It clears away the meconium; frequent green stools during first three weeks are not a reason for stopping nursing; they are only the result of the colostrum, and are beneficial to the child.

Nursing for six or eight weeks must be insisted upon. Weaning can be done any time after the second month. As lactation goes on, the proteid in the milk lessens. The child should be given one bottle of milk after third week, and two bottles a day after the first month, to accustom it to its later feeding.

In conclusion, in preparing cow's milk for the infant, the important things are (1) abundant fat, (2) low proteid, (3) light flocculent curds on addition of acid. This latter point means that the milk should behave physically like mother's milk. In order to bring this about, only the upper half ounce of milk which has stood sixteen hours should be used.

Dr. Kerr said that the use of only the upper half ounce necessitated a labor and expense that the average mother would not undertake. He also thought it was unwise to let the child have a bottle as early as Dr. Winters said, or to wean it entirely as early as the end of the second month. Dr. Kerr insisted on the mother nursing the child; he said that he had kept the infant at the breast as late as the ninth day, before getting a sufficient milk secretion, but he had always succeeded in the end.

Dr. Winters deferred his closing remarks until after Dr. Griffith's paper.

II. "REMARKS ON THE INFLUENCE OF FAT-FREE DIET IN INFANT FEEDING."—By J. P. Crozier Griffith, M. D., of Philadelphia. Dr. Griffith said that he was not going to advocate a fat-free diet as a routine, but he wished to speak of many cases of continued indigestion and loss of weight, which had been benefited by reducing the proportion of fat in the diet. We used to think that the casein in cow's milk was the only cause of indigestion in artificially-fed babies. Now we are beginning to believe that other constituents of cow's milk are often at fault. Human milk is relatively high in oleic acid, while cow's milk contains a high proportion of the volatile fatty acids. Some children do not seem capable of adjusting themselves to this difference. Dr. Griffith cited several cases he had seen, in which the infant had constant indigestion, with constipation and frequent vomiting and failure to gain weight. If these infants are fed on whey (made from skim milk,) egg water and gruels, and later given a milk formula with a low percentage of fat, improvement begins at once. We should not hurry these cases; a rest of two months, with very little fat during this time, is necessary. The masses found in the stools of many children with indigestion, are now shown to be not proteid (casein), but fat.

Dr. H. D. Chapin of Manhattan said that we ought not to go too far in advocating a fat-free diet. There are many cases like those described by Dr. Griffith, but we should not get the idea that it is always beneficial to cut out the fats, no matter what the child's condition of health or disease may be. Dr. Chapin said that the proteids of milk had a developmental use as well as a nutritive value; that is to say, the proteids of milk clot in a manner analogous to the food of the adult animal, so as to prepare the digestive tract for the food which the young animal must live on in later years. Hence, woman's milk cannot be made like cow's milk in any way that we know of.

Dr. Griffith in closing, emphasized the fact that the fat-free diet was not for all infants, but for a selected few.

Dr. Winters in closing the discussion on both papers, said that cream and milk cannot be made to mix; they will always separate into exactly the same amount of cream and milk that we had at first. He reiterated what he said in his paper about the similarity between the upper half ounce of cow's milk, and woman's milk. He referred to Dr. Southworth's recent paper before the American Pediatric Society, in which the author showed that the lumps found in infant stools by recent German experimenters were not *fat,* but *casein.*

III. "LEONTIASIS OSSEA DEVELOPING IN A CHILD WITH DIABETES INSIPIDUS, AND THE QUESTION OF ETIOLOGY."—By L. C. Ager, M. D., of Brooklyn. This child had a negative family history. Was well until 18 months of age, when he had a severe colitis; at 2½ years the child was irritable, was losing weight, had an abnormally large distended abdomen, (slightly tender and usually painful,) eczema and stomatitis. A diagnosis of tubercular peritonitis was made at this time. At 3½ years, the child had great thirst, vomiting, and polyuria with no sugar; basilar meningitis was then thought of. At four years, the polyuria was marked; the child would urinate three times during a meal; he passed from 16 to 18 pints of urine a day, or one-half his body weight; the specific gravity of the urine was 1002; it contained no albumin or sugar; the urea was low. Under general treatment, tonic and hygienic, the child improved considerably. Now, at the age of five, it is noticed that the frontal bone and the orbital plate of the malar bone on the right side are hypertrophied, so that this portion of the face is thrust forward, making the right eye appear larger and more prominent than the left. The appearance is striking and startling.

The disease seems to be distinct from acromegaly. No definite etiology is known; other cases have been reported showing polyuria and some of the other symptoms described above, but these symptoms have always followed the bone changes, while in this case, they preceded them.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 30 West 33rd St., New York.
Telephone, 781 Madison.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.
FRED M. TIBBETTS, Secretary.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Phillippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application.

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

EDITORIAL.

COLLABORATORS FOR PEDIATRICS.

As we announced in our last issue that we would have the assistance of a Board of Collaborators, we take great pleasure in presenting to our readers the following gentlemen who have consented to act:

W. J. Butler, M. D., Chicago, Ill.—Assistant Professor of Diseases of Children, Rush Medical College, Chicago; and Attending Physician, Children's Dep't., Cook County Hospital.

Wm. W. Butterworth, M. D., New Orleans, La.—Associate Professor Diseases of Children, Medical Dep't. of Tulane University, New Orleans, La.; and Attending Physician to Children's Out-Clinic Dep't. and Children's Wards, Charity Hospital, New Orleans.

Henry L. Coit, M. D., Newark, N. J.—Attending Physician, Babies Hospital; Consulting Physician, St. James Hospital, Newark, N. J.

Thos. D. Coleman, M. D., Augusta, Ga.—Professor of Medicine, University of Georgia.

Alfred C. Cotton, M. D., Chicago, Ill.—Professor of Diseases of Children, Rush Medical College, Chicago, Ill.

Chas. Douglas, M. D., Detroit, Mich.—Professor of Children's Diseases and Clinical Medicine, Detroit College of Medicine; Physician to the Protestant Orphan Asylum, Detroit; and Consulting Physician to Harper Hospital.

Theodore J. Elterich, M. D., Pittsburg, Pa.—Professor of Pediatrics, Western University of Penna, Med. Dep't.

W. C. Hollopeter, M. D., Philadelphia, Pa.—Professor of Pediatrics, Medico-Chirurgical College, Philadelphia; Pediatrist to the Medico-Chirurgical and Philadelphia General Hospitals; and Physician to the St. Joseph Hospital.

Le Grand Kerr, M. D., Professor of Diseases of Children in the Brooklyn Postgraduate Medical School; Pediatrist to the Swedish Hospital in Brooklyn; attending Pediatrist to the Williamsburg Hospital, Brooklyn.

H. M. McClanahan, M. D., Omaha, Neb.—Professor of Pediatrics, Medical Dep't., University of Nebraska; Physician to Children's Dep't. Bishop Clarkson Memorial Hospital; and Physician to the Child Saving Institute, Omaha, Neb.

Walter Graham Murphy, M. D., Hartford, Conn.

John B. Rae, M. D., New York City.—Professor of Otology, Post-Graduate School, N. Y.; Aural Surgeon, Riverside Hospital; Assistant Aural Surgeon, Manhattan Eye, Ear and Throat Hospital, New York City.

Meyer L. Rhein, M. D., D. D. S., New York City.—Lecturer on Dental Pathology, University of Penna. Dental Dep't., Philadelphia.

Henry L. Shaw, M. D., Albany, N. Y.—Clinical Professor Diseases of Children, Albany Medical College; Physician-in-Charge St. Margaret's House for Infants, Albany, N. Y.

J. Ross Snyder, M. D., Birmingham, Ala.—Pediatrist to the Hillman Hospital, Birmingham, Ala.

Parker Syms, M. D., New York City.—Surgeon, Lebanon Hospital, New York City.

Henry Enos Tuley, M. D., Louisville, Ky.—Professor of Obstetrics, Medical Dep't. University of Louisville; Visiting Physician Louisville City Hospital, Masonic Widows and Orphans Home and Foundlings Home, Louisville.

J. W. Van Derslice, M. D., Chicago, Ill.—Instructor in Pediatrics, Rush Medical College, Chicago.

Charlton Wallace, M. D., New York City.—Attending Physician East Side Free School for Crippled Children; Clinical Assistant Hospital for Ruptured and Crippled; New York Polyclinic Medical School and Hospital; and Red Cross Hospital.

John Zahorsky, M. D., St. Louis, Mo.—Clinical Professor of Pediatrics, Washington University, Medical Dep't.; Chief of Children's Clinic, Washington University Hospital; Attending Physician to the Bethesda Foundlings Home.

G. M. Wells, M. D., Portland, Ore.—Professor of Pediatrics, Medical Dep't., University of State of Oregon, Portland, Ore.

A Clean Milk Exhibit at Washington.—The New York Committee of the International Congress on Tuberculosis are making arrangements to make a clean milk exhibit at the International Congress on Tuberculosis, which meets in Washington, D. C., from September 21st to October 12th. Mr. Nathan Straus is preparing for the exhibit a duplicate of the pasteurization plants erected by him in Heidelberg, Brussels, and Berlin, and there will be a small working dairy, with tuberculin tested cows, skilled attendants, and sanitary utensils, shipping cases, and all the necessary appliances for the marketing of clean milk. An excellent opportunity will thus be afforded for a comparative study of pasteurized milk and milk not pasteurized, but clean. The exhibit will also include photographs of dairies, statistical charts, Petri plates of the bacteriology of milk, and illustrations of tuberculin tests for cattle. Among those who are cooperating with the committee in the preparation of this exhibit are Mr. W. W. Law, Jr., the Hon. Seth Low, Mr. V. Everitt Macy, Commissioner Pearson, Professor Moore, of the State Veterinary College, and Professor Stocking, of Cornell University.

Bacilluria in Childhood.— Box (Lancet) classifies infections of the urinary tract in children as (1) descending infections, (2) ascending infections, and (3) infections by contiguity. Descending infection is synonymous with infection carried to the kidney by the blood stream, and is therefore termed "hæmatogenous." But, while descending invasion does undoubtedly occur, yet the common cause of bacilluria in children is an ascending infection. The commonest form is that which is due to the colon bacillus. Although the disease may occur in males, it is much more common in females, which is strong corroborative evidence of its ascending character, for the shortness of the female urethra and the proximity of its orifice to the anus render infection easy. In babies infection through the urethra may occur from soiled napkins or from the passage of stools over the vulva. Infection of the urinary passages in childhood may manifest itself as pyelitis, cystitis, or incontinence of urine without obtrusive evidence of local inflammation. Pyelitis may occur as a febrile affection with sudden onset, chills, and pyrexia. When the course of the disease is protracted emaciation rapidly occurs. Enlargement of the spleen may often be detected, and sweating may be pronounced. As a rule, the local manifestations of the disease are unilateral, and the right kidney is more apt to be affected than the left. Slight vulvitis is present in some cases. Incontinence of urine is often associated with bacilluria, and the organism present is almost invariably the colon bacillus. The reaction of the urine is generally faintly acid, never alkaline. The prognosis of these colon infections must be guarded, as they may drag on for months. Frequent bathing and the avoidance of urethral contamination from the anus are important preventive measures. Full doses of potassium citrate combined with the sedatives of the belladonna group often act well, but belladonna is disappointing in inveterate cases. The writer has tried antibacillus coli serum in two cases of incontinence. In one the serum stopped the incontinence, though the bacilluria persisted. In the other the serum had no effect.—Charlotte Med. Jour., April, 1908.

ABSTRACTS

Enteritis in Children Treated with Lactic Ferments.—Infantine enteritis must be classified either by the symptoms or from bacteriological findings.

From the symptomatic point of view, the varieties can be classified as follows:—

Acute gastro-enteritis,
Acute summer diarrhoea,
Infantine cholera,
Dysentery,
Chronic gastro-enteritis.

From a bacteriological standpoint, the classification is not satisfactory on account of the great number of micro-organisms found in the intestine of such patients.

They are generally grouped under the headings of those micro-organisms which attack the mucous membrane directly and those which are present in the intestine producing abnormal fermentation. In the first group, the symptomatology is that of grave gastro-enteritis with persistent elevated temperature and precocious signs of entero-enteritis.

In the second group (fermentation giving rise to diarrhoea) the fever may not last long or may be absent and the fetid green stools do not show signs of blood or mucus.

In both catagories, the lactic ferments have been recently tried with good results. Skimmed milk is pasteurized and implanted with pure cultures of the Bulgarian lactic acid bacillus (a crushed Fermenlactyl tablet to a litre of milk) and maintained at a temperature of 40° Cent. for eight hours until a creamy buttermilk is obtained. This appears to bring about a very desirable change in entero-colitis with lesions of the mucous membrane or in cases in which the fermentation form was observed where the water diet and intestinal "lavage" had been unsuccessful.

Cohendy considers lactic bacteriotherapy useful in infectious diseases whether there be diarrhoea or constipation, whether there be expulsion of mucus or of membranes (*Arch. des Maladies de l'Appareil Digestif* Vol. 1 No. 9, p. 533). Terrien, (*Archives de Medecine des Enfants* Jan. 1908), recommends buttermilk containing living lactic acid bacilli with malt extract (as a culture medium as well as a nourishment) in cases of infantine enteritis and Mery and Terrien in May 1908 of the same journal, gave a series of observations showing the good effects of this method, from which the following is an example:

Observation XV—Louise S., 11 months old, born Feb., 1906. Digestive trouble since birth and in spite of the forms of infant feeding tried, the child wasted. For three months the breast was tried, then mixed feeding, but the child did not improve and a wet nurse was tried again, but the child remained stationary and other forms of feeding were given until at eleven months the weight of the child was only 5300 grammes. She was then put on malt extract and buttermilk and the breast three times a day, and as she seemed to improve a wet nurse with an abundant supply of rich milk was found, but without the living lactic acid bacilli of the buttermilk, the stools were defective and the weight decreased and the former system persisted in for two months.

The results were as follows:

Dec. 31,	weight	5,330	grammes	
Jan. 25,	"	6000	"	the buttermilk was suppressed between these dates.
Mar. 1,	"	6050	"	
May 24	"	7780	"	the buttermilk diet was in use.

After this time the child took ordinary milk and supported all nourishment well.

Strangulated Inguinal Hernia in Infants—with Report of a Case—Virginia Medical Semi-Monthly, Jan. 24, 1908).—Dr. J. E. Cannaday says the treatment in most cases is undoubtedly surgical so long as the patient is not moribund. When the patient is seen early after the symptoms of strangulation have made their appearance, and when the onset has not been acute, taxis should be resorted to, and in event of failure the hernia sac should be opened at once. Taxis is thought by some to be more especially indicated in the very young, who are hard to keep clean, and in the aged and infirm who do not bear operation well. Taxis may waste valuable time and may bring about the reduction of hernia en bloc or bowel that has lost its vitality. Violent manipulations may cause tearing of the intestine. Before resorting to taxis the stomach and lower bowel should be irrigated and emptied, the urine should be drawn, muscular relaxation obtained by appropriate posturing and the use of an anesthetic, the hernia should be elevated so as to be the highest part of the body. The fluid contained in the sac when opened is an excellent indicator of the condition of the intestine. If the fluid is ill smelling or contains flakes of lymph the bowel is very likely to be in bad condition. In attempting to make a decision whether a piece of gut is viable or not, the sense of touch may give more information than that of sight. The lifeless gut is flaccid and has the feel of moist blotting paper. Gray-brown spots are indicative of gangrene. Resection and even the formation of an artificial anus will often have to be resorted to. When there has been much infection the radical operation should be omitted and the wound packed with gauze. In case of doubt, sutures can be placed and left loose to be tied later. When the radical operation is resorted to it is usually best to make use of the simple and time saving methods. The author does not believe that the transplantation of the cord has any particular merit to commend it. Connell and Ferguson are quite certain that it predisposes to epididymitis or other inflammatory lesions. Operation infection should be very rare when a careful rubber glove technique is followed. After ligating the neck of the sac the author often carries the ends of the suture upward between the parietal peritoneum and rectus muscle and secure the neck of the sac in a higher position so as to obliterate the former funnel-like depression existing at the point of occurrence of hernia, after dealing with the sac the hernial opening is closed by the introduction of sutures of thirty days chromic catgut. The idea suggested by Czerney and later elaborated by Ochsner that if the ring is denuded of its lining before being closed union will be assured and recurrences rare, should be one of the basic principles of surgery of this part of the body. The cord is not moved from its normal position and the superficial is sutured over it with a running suture of plain catgut. The edges of the skin wound are approximated with the usual suture of silk or linen thread.—The Charlotte Med. Jour., March, 1908.

Tracheo-bronchial Andenopathies in their Relation to Chronic Pulmonary Tuberculosis in Children— CHARLES LEROUX (Ann. de Méd. et Chir. Inf.), has made observations on 500 cases of bronchio-tracheal adenopathies, examined clinically and radioscopically. He states that glandular tuberculosis is extremely frequent in childhood, and even in the nursing infant. It is the first localization of tuberculosis in the child, whatever its way of entrance. In nursing infants and young children it is much more frequent than ganglio-pulmonary tuberculosis. In children old enough to go to school we begin to have true ganglio-pulmonary tuberculosis. Clinical and radioscopic examinations show that these adenopathies can be recognized if sought for in the right way. Early diagnosis is most important since this glandular tuberculosis may lead to a secondary pulmonary, meningeal, or peripheral tuberculosis. Glandular tuberculosis is one of the most curable forms of the disease. It can be perfectly cured by hygienic measures, with a sojourn in the country, or preferably at the seaside. Cervical adenopathies treated at the seaside are cured in 75 per cent. of the cases met with, and tracheo-bronchial adenopathies in 50 per cent. of the cases. These children must be removed from their bad surroundings, and must be protected against the contagious diseases of childhood, which so frequently cause their death, and be placed in surroundings far from any source of infection. This stay at the seaside or in the country must be a long one. Cases apparently cured after a few months relapse again. The stay must be at least a year to obtain solid and durable results. The maximum frequency of pulmonary tuberculosis beginning in the apex of the lung is at from twelve to fifteen years of age. There are several modes of entrance of tubercular germs: through the lungs, when a pleurisy or a pneumonia is followed by an enlargement of the bronchial glands; by way of the rhino-pharynx, or skin, at the cervical or subclavicular glands; or by ascending lymphatic penetration through the intestine of bacilli that are swallowed. The last seems to be the rarest of the three ways of infection. The signs of ganglio pulmonary involvement are rough respiraiton at the apex without bronchophony or increased fremitus or change in resonance, decrease of physical signs from below upward; and accentuation of the signs in the subspinous space more than in the subclavicular. As soon as there are bronchophony and exaggerated fremitus there is a pulmonary lesion. Radioscopy is of great value in recognizing enlargement of the bronchial glands.—The American Journal of Obstetrics and Diseases of Women and Children, March, 1908.

Removing Adenoids—Dr. Samuel W. Thurber has given in a very precise and clear way the indications for and against removing adenoids and the method of operating. He quotes the following classification of these symptoms with a few modifications:

Indications For Removal.

1. Nasal obstruction, causing:
    (a). Broken sleep, struggling for breath, nightmare.
    (b). Anemia and general debility.
    (c). Malnutrition and stunted growth.
    (d). Headaches and poor memory.
    (e). Snoring.
    (f). Enuresis.

(The above when the child tries to breathe through the nose).

2. Mouth breathing with the attendant chronic pharyngitis, laryngitis, bronchitis, and croup.

3. The presence of adenoids, causing:
    (a). Thick speech of nasal quality.
    (b). Inability of infants to suck.
    (c). Frequent colds or a chronically running nose.
    (d). Deafness.
    (e). Gastric disturbances from swallowing nasal discharge.
    (f). Epistaxis.
    (g). Anosmis.

4. Reflex conditions sometimes due to the presence of adenoids.
    (a). Asthma.
    (b). Hay fever.
    (c). Stammering.
    (d). Epilepsy.

The contra-indications for operation may be given briefly as follows:

1. Do not operate during acute conditions.

2. Do not operate on children who have some grave constitutional disease, unless absolutely necessary.

3. Do not operate just because there are some adenoids present, for there may be other features operating in the case.

4. While adenoids may cause some of the reflex disturbances, other causes may be more important.

5. It is not a good plan to operate during epidemics of the infectious diseases, especially upon school children.

A very particular point that the author speaks of emphatically, is "Given a child under the age of second dentition, who is suffering from the presence of adenoids, should we wait for any reason except manifest contraindications?" He says, emphatically "No." The child's facial bones at that age are undergoing important changes and the chest is developing.

Will not the growth disappear by itself? There is a natural shrinkage at first, but the younger the child with indications, the more injury done during the years until he reaches puberty. Results are best in children between the age of four and eight, and we can more clearly promise a better relief to all the symptoms due to adenoids.—The American Practitioner and News, April, 1908.

Postoperative Treatment of Adenoid Patients.—(Am. Jour. Surgery, March, 1908)—Sheedy emphasizes the following points in postoperative treatment of adenoid patients: 1. Keep children in bed for from two to three days after operation, and away from other children. 2. Keep parts clean by use of alkaline washes and medicated mentholated oil solution. 3. Use constitutional and reconstructive medication. 4. See that thoracic gymnastics are practised for a long period. 5. Zinc oxide plaster over the mouth at night to keep the mouth closed until normal breathing is established. 6. Watch for return of the growths.—N. Y. Med. Jour., May, 1908.

Anatomical Lesions of Diffuse Spinal Amyotrophy in a Newborn.—(Archives de Médecine des Enfants, January, 1908) —Drs. P. Armand-Delille and Bondet report the *post-mortem* findings in the case of a child aged 6 months. Dr. M. Comby had observed the child during life, and the present authors quote his clinical report of the condition of child from Arch. d. Med. d. Enfants, September, 1905. The child was born of healthy parents. At birth he was apparently quite healthy, and developed normally until the age of 2 months. Until that time he had moved his limbs quite freely, but since then there had developed a steadily increasing paralysis of both arms and legs. At the age of 5 months, when he first came under observation, he was plump and healthy looking, with an active and intelligent expression. The four limbs were completely paralysed, as also his intercostal muscles, respiration being entirely diaphragmatic in type. Through the subcutaneous fat it was impossible to detect any muscular tissue. The sphincters were intact. Sensation was normal. All reflexes were abolished, with R. D. of practically all muscles. The child was subject to attacks of asphyxia, and during one of these, while on a visit to hospital for electrical treatment, he was admitted to the ward. Later he developed broncho-pneumonia, and died suddenly from syncope.

At the autopsy the muscular atrophy was found to be extreme, the muscles being merely represented by whitish fibres, difficult of identification, amongst the adipose tissue. The nerve trunks appeared normal, as did also the brain and cord, but the anterior roots were abnormally slender. Histological examination of several muscles verified the extreme atrophy in the great thinning of the fibres, the absence of fibrillation, and the abundance of nuclei. Some fasciculi were completely replaced by connective tissue. The diaphragm had, however, preserved its integrity. Examination of the motor nerves showed that many of the fibres had disappeared, others were degenerate, and only a minority were healthy. The sensory nerves examined were, on the other hand, quite healthy. The anterior spinal roots were atrophied, the fibres had either disappeared or were in a state of degeneration, contrasting markedly with the posterior roots and ganglia.

It was in the anterior horns, however, that the initial and characteristic lesions were noted. Here there was a marked atrophy of the radicular cells; and this became more marked as one passed from above downwards. Many cells had disappeared, others showed marked chromatolysis and atrophy. There was a certain degree of interstitial fibrosis, but no evidence of any vascular lesion. The posterior horns and white matter presented no abnormality, and the meninges were quite healthy.

From the above histological findings, the authors diagnosed the condition as "subacute diffuse poliomyelitis."

Werdig, Hoffman, and Thomson and Bruce have all reported similar cases, but in children over 3 years of age.

Regarding the etiology, the authors could find no evidence of syphilis. The explanation of the condition rested, in their opinion, between the selective action of some unknown toxin and defective development with tendency to premature decay of the cells in the anterior cornua.—Glasgow Med. Jour., May, 1908.

Cutaneous Reaction After Vaccination with Diphtheria Toxin.— B. Schick (Münch. med. Woch., 1908, lv, 504) injected diphtheria toxin in various concentrations beneath the human skin to determine its reaction. After concentrating it to one-tenth its volume in vacuo at a temperature of 30°, he obtained a definite cutaneous reaction, which in appearance is identical with the reaction obtained after injecting tuberculin. Unless the operator knows which solution he injected, he cannot tell the difference between the two reactions. Clinically, the tuberculin reaction is not nearly so often associated with a central pustule as the diphtheria reaction; this pustule is not due to infection, since the toxin has been found perfectly sterile a number of times. The specificity of the reaction was proved by neutralizing the toxin with antitoxin in vitro and injecting this solution, without, however, producing a reaction. The same was true in all cases in which the toxin injections were preceded, by twenty-four hours, by injections of 1500 to 3000 units of antitoxin, thus immunizing the patient passively. If the antitoxin injection is made several hours later, the reaction is as often positive as negative. In cases in which the reaction followed upon the toxin-antitoxin injection it lasted but forty-eight hours, while after pure toxin injections it lasted 120 hours. This shows that the antitoxin influences not only the production of the reaction, but also the healing. Of 95 children ill with diseases other than diphtheria, 36 reacted positively, 59 negatively; of 55 ill with diphtheria, 52 reacted positively, 3 negatively. In the former instances the reaction was much less intense than in the latter. Schick explains the latter reaction by the individual predisposition of individuals toward diphtheria.—Am. Jour. Med. Sciences, June, 1908.

Immunity to Tuberculosis.—(Norsk Magazin for Lægevidenskaben. Christiania)—ANDVORD thinks that tuberculous glandular processes in children leave the system immunized to other forms of tuberculosis after healing. He attributes chronic pulmonary tuberculosis in adults to some primary glandular process. "Galloping consumption" is probably primary, he thinks, the infection occurring by inhalation in persons free from a primary glandular process and thus not immunized, or an acquired immunity having died out. He ascribes to the gastrointestinal route the origin of the other forms of the disease. Treatment should aim to assist the organism in establishing immunity, and it should be commenced at the first sign of glandular infection, as representing the initial phase of tuberculosis, when it can most easily be stamped out.—J. A. M. A., May 15, 1908.

Adenoid Vegetations and Impairment of Hearing.—COHN (Zeitschrift f. Ohrenheilkunde, v. lii, p. 246).—As an argument for the establishment of exact examination of the nose, throat, and ears in school children the author gives the result of his investigations in 1573 cases. Of this number 315, or about 18 per cent., were found to have a sufficient degree of impairment of hearing to make a professional examination advisable, although in the majority of them the impairment had not been noticed, either by the patients themselves or by the teachers. In 153 cases the impairment of hearing was directly referable to the presence of adenoids, and in 12 additional cases it was referable to the consecutive changes induced by adenoids which had spontaneously resolved. The number of cases in which adenoid vegetations could be regarded as the causative factor in the impairment of hearing in all the cases considered, amounted therefore to about 52 per cent., and the author lays stress upon the importance of a preliminary examination of all school children, both objectively and by hearing tests, at their entrance upon school life, as well as at later stated intervals, and gives the Bezold estimate of 2 metres, for the whispered voice, as the lowest acceptable standard.—Am. Jour. Med. Sciences, June, 1908.

Raw vs. Sterilized Milk.—BRUNING (Zeit. f. Tiermed., 1907, x) has carried out some experiments which help to demonstrate how complex is the question of the comparative value of raw and sterilized milk in infant feeding. A litter of newborn animals was divided, and part were fed with raw and part with boiled milk of another species; the latter fared the better. On the other hand, animals fed on raw milk of their own species did better than those that received it cooked. Bohme (Deut. med. Woch., October 25, 1906) made comparative tests with milk treated with hydrogen peroxide and perhydrase and sterilized milk. The former agrees well with infants more than three months old; but with those younger than that sterilized milk gave the better results. It is to be said, however, that the number of infants under observation was far too small to warrant much generalization.—Am. Jour. Med. Sciences, June, 1908.

Hysteria in Children.— (Med. Fortnightly, April 10, 1908) —PRICE discusses the symptoms, diagnosis and treatment of hysteria in children. The diagnosis depends on the history, the absence of other adequate cause, and the presence of so-called hysterical stigmata. These stigmata represent certain of the sensory changes, and, briefly enumerated, are as follows: Areas of cutaneous hyperesthesia along the spine, under the breasts, and over the inguinal regions (the two last named being, as a rule, most marked on the left side), glove-like and stocking-like anesthesia or hyperesthesia of the extremities, anesthesia of the retinæ causing contraction of the visual field and anesthesia of the pharynx and conjunctiva and the choking sensation—the common "globus hystericus." But it must be remembered that the presence of hysterical stigmata in a given case does not rule out the possibility of a more serious condition being present. Price describes four cases representing the hysterical tremor (unusual), the hysterical joint type, the psychic type, and the visceral type, the latter in a case of hysterical dyspnea.—Jour. A. M. A., May 2, 1908.

Spasmodic Croup.—GROVE (Charlotte Medical Journal, Feb., 1908), treats spasmodic croup with the bromides as follows:

A baby several months old up to a year old is given one-half drachm doses of elixir sodium or potassium bromide every half hour in four times its volume of water, until the child is relaxed and quiet. Usually two to three doses are sufficient. Subsequent doses need only to be given two or three or four hours apart. With older children increase the dose up to one, one and a half or two drachm doses as required.

Along with this treatment more especially the day following, order one or two warm baths to be given, one in the morning and the other just before retiring, using a teaspoonful of magnesium sulphate to one pint of water. The object of this bath is to hasten elimination of the skin glands, thereby relieving the mucous membranes of their congestions. Physic is usually given, most generally calomel perhaps about one grain, and by morning this is sufficient to purge the bowels so as to work off the toxic materials from the bowels, liver and glandular system in general. If the stomach seems to be nauseated apply a mustard draught to the epigastric region, which acts very nicely to allay same, to the extent of gentle redness. Give in connection with this a little aconite, which always acts very nicely in all colds, using about two drops to the ounce combined with five or ten grains ammonium carbonate in syrup of tolu, one-half teaspoonful every half hour; or in lieu of that use veratrum the same dose with six to eight drops to the ounce.—Vermont Med. Monthly, April, 1908.

The Early Diagnosis of Measles.— A. ALY-BELFADEL (La Semaine Medicale, Jan. 8, p. 22).—From examination of children exposed to the contagion of measles before the appearance of the rash the writer states that the prodromal conjunctivitis presents special characters which distinguish it from the conjunctivitis of ordinary coryza. In the latter the injection of the mucous membrane usually begins at the cul-de-sac of the eyelids, whence it extends to the ocular and palpebral surfaces. In the early conjunctivitis of measles the first sign of injection is observed on the bulbar conjunctiva on either side of the cornea directly opposite the palpebral fissure. If seen sufficiently early the redness occupies the usual situation of pterygion but spreads so rapidly that by the following day the whole mucous membrane of the eye is involved. This sign was found in over 70 per cent. of the cases examined and so early that the careful examination of the skin even with a blue glass failed to reveal any trace of eruption. —The Medical Review, May, 1908 (London).

Bradycardia in Appendicitis in Children.—(Deutsche Med. Wochen. Berlin, April 9, 1908)—Ten cases are reported by von Bokay in which children with appendicitis presented bradycardia during the period of absorption of periappendicular inflammatory products. The pulse dropped to 52 in some or below 80, but no parallelism could be detected between the curve of the pulse and that of the temperature. The bradycardia is not an unfavorable sign; it may be accepted as an indication that absorption has commenced. It is probably due to irritation of the vagus. He states that he had been unable to find any reference to this symptom in appendicitis except Kahn's article in The Journal, Dec. 15, 1906, and Kahn mentions bradycardia only in respect to adults. In some of von Bokay's cases the bradycardia came on after operative evacuation of an appendicular abscess, or followed interval appendicectomy, and persisted for several days.—J. A. M. A., May 16, 1908.

Saline Infusions.— (Australasian Med. Gazette, Jan., 1908) —It has become so common a practice to inject normal saline infusion into the subcutaneous tissues as a means of stimulating a failing heart that we are perhaps inclined to overlook the fact that this procedure has its limitations and dangers. Œdema of the lungs, watery diarrhœa, effusions into the serous cavities collapse have been known to follow the use of this method of stimulation. According to Rössle, who writes in a recent issue of a German medical journal a condition of heart muscle consisting in cloudy swelling of the muscle with increased friability has been found in a sufficient number of cases to enable him to assert with a fair amount of accuracy that a saline infusion had been given shortly before death. He records two cases in which he considers that the post-mortem showed a directly injurious effect of the infusions. The introduction of a large amount of saline fluid except after a severe hæmorrhage appears to favour the accumulation of serous fluid in various organs and tissues, and this cannot but be a source of danger in cases where the cardiac muscle is impaired or the elimination by the kidneys is defective. We should, however, be disposed to doubt the accuracy of Rössle's conclusions as to the direct effect of saline infusions upon the cardiac muscle, and to think that more probably the softening of the cardiac muscle was an antecedent condition and one which produced the clinical symptoms to combat which the injections had been given. Nevertheless it is well to bear in mind that saline infusions should not be given recklessly.

Acute Hemorrhagic Nephritis, After Mumps, in a Seven Months' Old Infant.—Jelski (Arch. f. Kinderheilk., Vol. 47 page 164) reports the case of a seven months infant who had a moderately severe parotitis.

Two weeks after the onset it was noticed that there were bloody specks on the diaper. Examination of the urine showed the picture of an acute hemorrhagic nephritis. Despite energetic treatment the child died with a picture of uremia. Careful search of the literature showed the author that the cases of nephritis following mumps in childhood have occurred in older children. It is noteworthy that three other children in the family, who had mumps at the same time, showed no complications.—Interstate Med. Jour., Feb., 1908.

The Roentgen Ray in Pediatrics.—Dr. Thomas M. Rotch read a paper on this subject at the last meeting of the Massachusetts Medical Society (Boston Medical and Surgical Journal, October 24, 1907), which he illustated by fifty lantern slides. He concludes:

"The Roentgen method of examination assists and does not replace other methods of examination. Over and over again, however, it corrects and controls an otherwise faulty diagnosis and makes possible a study of the living anatomy and pathology of the different periods of life. In pediatrics I have found it of inestimable value, for the wonderful recuperative power which exists in children allows great opportunities for a varying treatment, if we can only follow the living, ever changing processes of the disease every few days. Used in this way for diagnosis, the Roentgen ray shows us the primary lesions of the disease, and for treatment, therefore, the knowledge obtained by this method is far more important than a knowledge of the terminal lesions found at the post-mortem, especially as these latter lesions are often misleading as merely representing terminal destructive processes corresponding to the later stages of a number of different diseases."—Annals of Gyn. and Ped., Feb., 1908.

Some Experiences in Infant Feeding.—C. W. East (Illinois Med. Jour., March, 1908) says that the percentage of women of the better classes able and willing to nurse their babies is increasing, but that the majority of infants between birth and fifteen months are obliged to have some help in their diet, that wet nursing is a practical impossibility, that proprietary foods are unsatisfactory and that while he always respects the percentage composition of food for qualitative values and finds the caloric method of assistance in fixing the quantitative value; that these are only helps and are not the solution of the problem. He divides his feeding cases into four groups.

1. Those cases where the maternal supply has been practically absent or the quantity so small that the child can not be nourished upon it. These infants usually do well on artificial feeding.

2. Cases which have to be taken from the breast after several weeks nursing or attempted nursing, they do not do as well as those in the first group as digestion and assimilation are generally disturbed.

3. Where the child has not been suspected of malnutrition, as there has been a very slow gain in weight often show a fat indigestion.

4. Those cases that do not show a gain in weight have colic, whine a great deal, frequent attacks of diarrhoea with foul smelling stools.

The author concludes as follows:

1. Milk feeding is the goal of effort in each case, but is always approached gradually, and radical changes to other foods are advised temporarily and a new approach to milk feeding attempted rather than experimental efforts in cow's milk dilutions.
2. The substances used are few and available. Fresh cow's milk, buttermilk, condensed milk, cereal waters, milk sugar, egg albumin, beef juice, cod liver and olive oils, orange juice.
3. The effort primarily is to secure food the child will digest and not to secure gain in weight.
4. Percentage, composition and caloric value of food are always heeded, but the child itself is the chief guide to the food it can assimilate.

Descending infection is synonymous with infection carried by the blood stream. The writer gives examples of diseases liable to cause a descending infection, such as infective emboli causing renal infarction, miliary tuberculosis, the bacilluria of typhoid fever, and the occurrence of pyelitis or of transitory incontinence of urine in such diseases as measles, scarlet fever, diphtheria and smallpox. In many of the cases of bacilluria associated with typhoid fever, scarlet fever, measles and diphtheria, the organism present has been found to be the bacillus coli communis.

While there is clinical evidence that the urinary tract may be the site of a descending infection, it is questionable whether the common invasion in childhood is really of this character. The body can dispose of enormous numbers of injected bacilli without their appearing in the urine. When they do appear, the time of their appearance and the substances which appear with them lead to the presumption of renal damage.

Clinically, in cases of bacilluria, the organisms appear in the urine, even when freshly voided, in enormous numbers, and it is quite the exception to obtain any definite evidence of renal damage in the form of casts or blood.

These facts lead to the suspicion that the common cause of bacilluria is due to an ascending infection.

The writer thinks that ascending infections in childhood are much more common than is ordinarily supposed. After mentioning the possible channels through which the infection might reach the kidney, he decides that the ureter must be looked upon as the common highway of infection. There is no doubt that in children the commonest infection of the urinary tract is that which is due to the colon bacillus. Although the disease may occur in males, it is much more common in females, which is strong corroborative evidence of its ascending character, for the shortness of the female urethra and the proximity of its orifice to the anus render infection easy.

The facts bearing on ascending infection have recently been emphasized by H. Lenhartz, who, investigating the cause and incidence of pyelitis in the adult, found that 66 out of 80 cases were due to the colon bacillus, and that males were rarely infected. The colon bacillus grows by preference in alkaline, or just neutral media, but can also grow in acid urine. It does not decompose urea, and does not give rise to ammoniacal products. In colon cystitis and colon pyelitis the inflammation is as a rule of a very superficial or catarrhal nature. Lastly, the organism is motile, and so may, without the assistance of urinary stagnation, make its way into the pelvis of the kidney.

Clinically, infection of the urinary passages in childhood may manifest itself as pyelitis, cystitis or incontinence of urine without obtrusive evidence of local inflammation.—N. Y. S. Jour. of Med., March, 1908.

Tea as a Cause of Child Brain Stunt in Dorset County, England.—(Abstract from Dr. P. W. Macdonald's presidential address before the British Medico-Psychological Association, July, 1907). The father, mother, son, daughter, and even the suckled infant, all share alike from the ordinary fare of black tea, bread and cheese, morning, noon, and night. This is no colored picture, it is the simple truth. If the beverage tea were properly prepared, and not indulged in too freely, no harm would be likely to accrue; but what will be said of the ordinary laborer who consumes daily two to three quarts of black tea thus prepared? A brew is made between 5 and 6 a. m., and this same pot continues in use by being added to from time to time during the working day, until at last it is little else than rank poison. The fact that this tea is without either sugar or milk, being what is familiarly known in Dorset as "stark naked," makes things worse, and I am convinced is in many cases the cause of insanity among the laboring class. I am not decrying tea in its proper place, but the evils of tea-drinking among the working classes have to be reckoned with in any attempt to probe deeply the cause of insanity. As a nation we consume six times as much tea per head as any other European country. This innutritious diet must lead to impaired nutrition of the nervous system, and as has been pointed out by the Irish Board of Lunacy, "when acting over many generations may have developed those neuropathic and psychopathic tendencies which are the precursors of insanity." Facts of this nature may lend color for the demand for free breakfasts to certain classes of school children, and whoever has visited the typical village or town school could not have failed to observe the number of dull, stunted and neurotic children. In the course of my inquiries I found as many as 15 *per cent.* of non-educable children in village school and the percentage of dull and backward ran as high as 35 *per cent.* Well might the author of *Physical Efficiency* say: "The towns will soon call in vain; for in place of being robust and healthy, the children of the rural districts will often be found to be stunted and in a worse plight than the city children." With these evidences of brain poverty and physical defects looming large before us we might be tempted to agree with the learned professor when he advises us to throw beer, spirits, tobacco, tea, and coffee into the Atlantic as unnecessary and that the race would be better for it. Whether this advice will ultimately prove to be a panacea time alone will show, but it would certainly solve many of the problems with which philanthropists, physicians and politicians have to deal.—The Alienist and Neurologist, Feb., 1908.

A New Method of Dealing with Cleft Palate. — STARR (British Medical Journal) modifies the customary operation for cleft palate by an aluminum plate so formed and placed that it not only diminishes tension but prevents the child from sucking on the stitches. After the customary preparation and denudation of the edges and suture with horsehair, aluminum of gauge 36 in thickness is bent at an angle where he wants it to fold over the outer side of the flap, passing it through one lateral incision; then by passing a pair of forceps into the opposite lateral incision he grasps the free end and pulls it down into the mouth cavity again. It is carried across it at the point to which it entered and the excess cut off. With a heavy needle the metal is easily penetrated at one or two points and may be secured in place by horsehair suture. To prevent the free end scraping and irritating the tongue, it may be turned up into the lateral incision and pinched with a pair of forceps. It affords excellent results.—Therapeutic Gazette, April, 1908.

BOOK REVIEWS.

THE DISEASES OF INFANCY AND CHILDHOOD; DESIGNED FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By Henry Koplik, M. D., Attending Physician to the Mount Sinai Hospital; formerly attending Physician to the Good Samaritan Dispensary, New York; Ex-President of the American Pediatric Society; Member of the Association of American Physicians, and of the New York Academy of Medicine. Second Edition, thoroughly revised and enlarged. Illustrated with 184 engravings and 33 plates in color and monochrome. Lea Brothers & Co., New York and Philadelphia.

Dr. Koplik states that in this edition he has brought the work abreast of the times, various sections have been revised and some entirely rewritten, merely theoretical and impractical matters have been avoided while greater space has been devoted to the Physiology and Pathology of the new born.

The author is well known for the discovery of the pathognomonic sign of measles known as "Koplik's Spots." He describes them as follows: "On looking at the mucous membrane lining the cheeks (buccal) in strong sunlight, a very characteristic eruption of irregular stellate or round rose-colored spots is seen. In the centre of each spot there a bluish white speck. This appearance of a bluish-white speck on a rose colored background is pathognomonic of the onset of measles. The speck is sometimes so minute that strong sunlight is necessary to render it visible. The number of specks at the onset may be less than half a dozen. In a short time they become more numerous and the rose-colored spots become confluent so that there are diffusely red patches of buccal mucous membrane studded with bluish-white specks."

The volume is divided into fourteen sections; Infancy and Childhood, Infant Feeding, Diseases of the Newborn, The Specific Infectious Diseases, Diseases of the Digestive System, The Respiratory System, the Circulatory System, Constitutional Diseases, Diseases of the Lymph-Nodes, Ductless glands and the Blood, Diseases of the Bones, Ear, Kidney and Urogenital Tract, of the Nervous System and Diseases of the Skin.

DYSPNOEA AND CYANOSIS. By Prof. Dr. Edmund von Neusser, Professor of the Second Medical Clinic, Vienna; Associate Editor Nothnagel's *"Practice of Medicine."* Authorized English Translation by Andrew MacFarlane, M. D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College, etc., etc. Part I of a series of monograph-translations from the German on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. 8vo., 203 pages, cloth, postpaid, $1.50. E. B. Treat & Co., Medical Publishers, 241-243 West 23d Street, New York.

This monograph of von Neusser has been exceedingly well translated by Dr. MacFarlane and is of much interest not only to the general practitioner but to the pediatrist as well, as many cases of Dyspnoea and Cyanosis are cited in children. Hebra mentions a case of a grave laryngeal ulceration transferred to the surgical division for tracheotomy that later turned out to be suffering from measles. Marfan and Halle state that in rare cases of varicella if the process becomes located in the larynx symptoms of suffocation are produced; the diagnosis may be difficult if the larynx is involved before the eruption of the exanthema.

In typhoid fever in children laryngeal symptoms may develop at an early stage.

This little volume is very practical and the subject seems viewed from every standpoint, and the author has made clear the relation of symptom to disease.

BRADYCARDIA AND TACHYCARDIA with complete English abstracts and foreign biography. By Prof. Dr. Edmund von Neusser. Authorized English Translation by Andrew MacFarlane, M. D. 8 vo. 150 pages. Cloth, $1.25. E. B. Treat & Co., Medical Publishers, 241-243 West 23d St., New York.

In the review of the above volume last month, the name of the publisher was omitted by error.

PUBLISHER'S NOTICE.

THE TREATMENT OF INDIGESTION.

(*From the New York Medical Journal, Feb. 29th, 1908.*)

Recent reports from physicians, who have been using Papayans Bell in gastritis and intestinal indigestion, indicate that this preparation has often produced favorable results after pepsin and pancreatin had proved unsatisfactory, and there is ample evidence furnished by successful practitioners that its use is steadily gaining in favor. They report that it increases the appetite, promotes the digestion of food, corrects fermentative conditions and stimulates the secretions of the salivary, peptic, pancreatic and bilary glands to natural action, thus restoring the digestive tract to a normal condition. The superiority of the results obtained by the use of this preparation in the treatment of gastrointestinal diseases may be due to the nature or to the quality and proportion of the ingredients, or it may be due to the method of their preparation and combination; but, whatever the reason, the fact remains that its use is steadily and rapidly increasing and that many of the most prominent local physicians are now steadily prescribing it.

THE FIRST SYMPTOMS OF MIGRAINE.

Dr. J. J. Caldwell of Baltimore, Md., in *"Medical Progress"* writes as follows: "The treatment of migraine, to be correct, must be adjusted on the basis of the element of causation. Constipation, if present, should be treated by a proper dietary and regular habits, but purgatives should be avoided. Only mild laxatives should be employed, and they should be abandoned when diet regulates the bowels, as proper diet will do. During the premonitory stage we can generally abort or rather prevent the development of an attack by the administration of two antikamnia tablets. They should be given as soon as the first symptoms of the attack are manifest. If then, all symptoms are not speedily dissipated, another dose should be given in three-quarters of an hour or an hour. This means is a most effectual one to abort an attack, and when the attack is developed, antikamnia tablets will relieve the pain usually in about forty minutes."

PEDIATRICS

Vol. XX SEPTEMBER, 1908 No. 9

ORIGINAL ARTICLES

URINARY INFECTION IN CHILDREN.*

John Zahorsky, M. D., St. Louis.

The primary object in presenting this subject at this meeting is to emphasize the fact that infections of the urinary tract have not received a proper place among the subjects taught to medical students. A perusal of our text-books gives the impression that this subject has a secondary importance. It follows that the practitioner pays little attention to the urinary tract in infants and children; for he naturally places disease of the urinary organs among the rarities of clinical medicine. I must admit that this was my own position until three years ago. Then, stimulated by writings of the students of Escherich and Jacobi I began a careful search for the disease in all suspicious cases. The microscopical examination of urinary sediments became a daily task. The result was remarkable. In a little over two years I have seen 46 cases of urinary infection in infants and children mostly in private practice. Several were seen in consultation with other physicians.

---

*Read at the Second Annual Meeting of the American Association of Teachers of the Diseases of Children, Chicago, Ill., June 1, 1908.

Urinary infection in children in the Mississippi Valley is a very common disease and ranks next to the respiratory and gastro-enteric infections in clinical importance.

The disease is usually overlooked or mistaken for some other disease; most commonly it is diagnosticated as malaria, septicemia, influenza, pneumonic fever, dentition, etc. Two of my little patients had received repeated hypodermatic injections of quinine. In three instances the physicians had frankly conceded that they were unable to make a diagnosis. In some cases a chemical examination of the urine had been made, but a microscopical examination of the urinary sediment was considered unnecessary, or if made was not properly interpreted.

In view of this experience the necessity of more instruction in the urinary diseases of childhood has impressed itself on my mind.

It must be admitted that many points concerning the disease are still obscure. The route of bacterial invasion is by no means settled. The fact that the disease occurs mostly in girls suggests an invasion through the urethra. It must be remembered, however, that Wreden experimentally proved that injury to the rectum is frequently followed by a cystitis. Injury to the rectum as the result of hardened feces or enemata carelessly given is one of the most common accidents of infancy, and it is possible that it is etiologically related in certain cases. In quite a large proportion of my cases I have observed a simple vaginitis precede the cystitis. I am rather inclined to lay considerable stress on this as an antecedent condition. Contrary to Finkelstein's observation, in my series of cases gastro-enteric disturbances were not especially prominent as antecedent conditions.

Another question which has by no means been solved is the usual anatomical site of the inflammation. Escherich and his students almost invariable write about a cystitis, while our American writers (Jacobi, Holt) describe the disease as a pyelitis. Since the bladder must be affected in all severe cases more or less the name cystopyelitis has come into frequent use. As a matter of fact, we are only exceptionally justified in making a very exact anatomical diagnosis from the clinical symptoms and signs. Certainly from the character of the epithelial cells under the microscope it is impossible to judge whether the bladder only or the pelvis of the kidney is affected. The presence of tube casts, of course, would be strong grounds for diagnosticating a pelvic infection. In the vast majority of my cases, casts could not be found. The term urinary infection should be preferred until some accurate diagnostic procedures are discovered. I have received the impression that in most cases the disease is limited to the bladder. When frequent micturition and tenesmus are present the diagnosis of cystitis is extremely probable; the absence of these symptoms in infants does not exclude an inflammation of the bladder.

The morbid anatomy needs more study. One of my patients died of the disease and I had the opportunity to make a post-mortem examination. The patient was S., aged 8 months, an inmate of the Bethesda Foundling Home. It will be unnecessary here to give a full clinical history; suffice it to state that the chief syndrome of symptoms was a fever ranging from 103 degrees to 106 degrees. The urine contained albumin, red blood corpuscles, numerous pus corpuscles, many epithelial cells and a few hyaline casts. The baby died suddenly with a temperature of 107 degrees after an illness of about two weeks. An autopsy a few hours after death revealed no disease in the internal organs except the urinary organs. The mucous membrane lining both tracts from the pelvis of the kidney to the urethral openings showed irregular congested and pigmented areas. The most striking change, however, was ulceration. Minute denuded areas, circular and elliptical in outline, in enormous numbers covered the lining of the urinary tract. The depth of the ulcerations varied from superficial erosions to deep punched-out ulcers. Scrapings examined from the pelvis of the kidney, the ureter and the bladder were composed of cells and pus corpuscles. A bacillus morphologically identical with the colon bacillus was present. No microscopical examination of sections was made. The kidneys appeared normal.

To the practicing physician the clinical picture of the different cases has the greatest interest. Three clinical varieties were found in my series of cases. The first is the febrile form with or without symptoms referable to the urinary organs.

There is nothing especially characteristic of the type of fever. It may be continuous and very much resemble typhoid fever, as Hartwig pointed out several years ago. Four of my cases presented this form of fever. More commonly, the fever is remittent in character and may readily be mistaken for malaria. Chills were present in only a few of my cases; sweating does not seem to be a common symptom. The temperature runs especially high in infants.

There is one peculiarity of the fever which has a certain diagnostic value and that is the absence of any great systemic depression. The infant with a temperature of 105 degrees may still be inclined to play and take an interest in the surroundings. The cerebral and circulatory functions usually do not show that marked depression which is found in some other infectious diseases.

This febrile movement may be the only symptom present. Consequently, this diagnostic rule should be repeated until every student has permanently acquired its practical importance: In every case of fever in infants and children, the cause of which is not determined by a physical examination of the body, a microscopical examination of the urine should be made.

The second form of urinary infection is that seen under the syndrome of malnutrition. It is often a sequel of the febrile form. Occasionally, the fever is overlooked by the mother. The patient feels tired, looks pale, is very nervous, very restless at night, and loses in weight.

The third form is that of urinary incontinence. Whenever a child who has had no trouble in the proper control of the bladder, suddenly develops incontinence a urinary infection should be suspected. This is also, as a rule, preceded by some febrile movement.

A number of my cases, because of peculiar manifestations, were misleading from a clinical standpoint. A few examples will suffice.

In consultation with Dr. Sh. I examined E., female, aged 8 years. She was attacked suddenly with high fever, vomiting, severe headache and pain in the back of her neck. Slight cervical opisthotonos and Kernig's sign were present. She also complained of photophobia. The urine contained numerous pus corpuscles, and the symptoms rapidly improved after a few doses of hexamethylenamine.

In another case the physician diagnosticated pneumonia on account of the presence of a cough and persistent high temperature. As no consolidation developed after a week he naturally was puzzled.

Another patient sent to St. Louis from Arkansas had been treated for two months with massive doses of quinine and arsenic. In this case the regular remission of the fever was very striking and the diagnosis of malaria certainly seemed rational.

Fromm in his studies found quite a number of cases of urinary infection with no clinical manifestations. In our work at the Washington University Dispensary we have also found such cases. Careful inquiry, however, would nearly always discover obscure febrile reaction some time before.

A peculiarity that deserves special mention is the great tendency to relapses. It is remarkable that other infectious diseases favor this relapse. In three instances an acute respiratory disease, probably influenza, was complicated by a recurrent cystitis. Gastroenteric infection was responsible for several relapses as well as primary attacks. In one patient a persistent fever after measles was found to be due to a urinary infection although she had been treated for this affection seven months previously. This experience has suggested another rule. When a child has had a urinary infection the urine must be carefully watched during and after any acute disease which occurs subsequently.

My experience in treatment offers nothing new. Hexamethylenamine can usually be relied upon to remove the general symptoms. It must, however, be given in large doses. It must not be combined with alkalies, since an acid urine is necessary to procure the highest bactericidal power. I can confirm Dr. Abt's observation that the administration of this drug will cause hematuria if continued too long or in too large doses. The drug should be given in full doses for two days and then discontinued for about two days. Other urinary antiseptics are less reliable.

In conclusion I offer a brief summary of my cases:

Of the 42 cases, three occurred in the male and 39 in the female sex. One patient died. The onset was gradual in 22 cases, sudden in 20 cases. Six patients were less than six months old. Nine cases occurred in infants from 6 months to one year. Fifteen cases occurred in infants during the second year. The oldest child was nine years of age. Of the infants under one year of age, only two were breast-fed.

The seasons seem to have had no influence on the occurrence of the disease. The majority of the patients were among the well-to-do. Digestive disturbances preceded or accompanied 12 attacks. Influenza seemed to be etiologically related in 5 cases. Constipation occurred in 7 cases. In children over two years of age the fever as a rule lasted two or three days only. In one little girl 6 years of age an irregular fever continued for 17 days. The fever was invariably high and protracted in infants under one year, except in one breast-fed baby. The length of the disease as measured by the pus in the urine varied from five days to 8 months. As a rule some pus corpuscles could be found in the urine for at least two weeks even when the fever subsided in two or three days. The defervescence of the fever is no indication that the local inflammation has subsided.

1460 S. Grand Ave.

THERMAL DEATH POINTS OF MILK BACTERIA AND OTHER EFFECTS OF HEAT UPON MILK.*

By M. J. Rosenau,

DIRECTOR HYGIENIC LABORATORY, U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, WASHINGTON, D. C.

I. THE EFFECT OF THE HEAT UPON BACTERIA IN MILK.

The temperature at which milk should be pasteurized hinges on the thermal death points of the pathogenic micro-organisms which contaminate it. The pathogenic micro-organisms most frequently found in market milk are those causing tuberculosis, typhoid fever, diphtheria, scarlet fever, dysentery, and Malta fever. Fortunately none of the organisms causing the above-mentioned acute diseases have resisting spores. Moderate degrees of heat are, therefore, sufficient to render milk safe so far as these dangers are concerned. The streptococci, staphylococci, and most of the bacteria associated with infantile diarrhea are also readily destroyed by heat.

Although it would appear to be a comparatively simple matter to determine precisely the temperature at which micro-organisms die, such work is in fact surrounded by many difficulties and pitfalls; different investigators have come to widely different results. Some of these discrepancies are only apparent and may be explained by the relation of time to temperature. The longer the time of exposure, the lower the temperature necessary to kill any organism. Differences in methods are also responsible for differences in results.

Among bacteria some strains or races are more resistant to heat than others. These differences, which correspond to similar known variations in all animal and vegetable species, must be taken into account.

---

*Read at the Second Annual Conference of The American Association of Medical Milk Commissions, Chicago, Ill., June 1, 1908.

Evaporation takes place so rapidly from exposed fluids that the surface layer may remain cooler than the body of the liquid. This is especially a matter of concern with milk, which sometimes forms a scum above 60° C., owing to rapid evaporation of the surface layer. This scum consists of coagulated albumins in which is enmeshed much fat. The bacteria entangled in this surface pellicle may escape the heat indicated by the thermometer in the deeper layers.

As a rule, bacteria are attenuated and lose their power to infect before they lose their ability to vegetate upon artificial culture media. It is, therefore, safe to assume that a microorganism that will not grow in artificial media under favorable conditions is "dead." The tubercle bacillus is an exception to this rule, for reasons given further on.

The methods used in the tests recorded below were planned to imitate the actual conditions of pasteurization, so far as practicable, in laboratory experiments.

The test tubes in which the infected milk was heated were open to the air, and scum formation was disregarded in all instances, my object being to determine the thermal death point against natural difficulties, so that the results might be applied with confidence to practical pasteurization.

BACILLUS TUBERCULOSIS.

Certain special difficulties are met with in determining the thermal death point of the tubercle bacillus. This organism does not grow readily upon artificial media. The few experiments made to determine its thermal death point by cultural methods have no significance, because its vegetability upon artificial media does not correspond to its power of growing in the animal organism. It is therefore necessary to inoculate animals in order to determine whether or not the tubercle bacillus is alive and virulent. Here again we meet with complications. Dead tubercle bacilli have a certain amount of pathogenic power and produce lesions, including tubercle formation, abscesses, and coagulation necrosis. However, while we lack a criterion to determine with precision the exact point when the tubercle bacillus dies, we are able by means of animal inoculations to determine just when the tubercle bacillus is so enfeebled that it is no longer able to infect. This, after all, is the important practical point.

In my own experiments, in order to avoid the confusion resulting from the effects produced by dead tubercle bacilli, doubtful lesions were carried over into another animal.

Conclusion.—From these experiments it is evident that the tubercle bacillus in milk loses its infective properties for guinea pigs when heated to 60° C. and maintained at that temperature for twenty minutes or to 65° C. for a much shorter time.

It should be remembered that the milk in these tests was very heavily infected with virulent cultures, indicated by the prompt deaths of the control animals. Milk would practically never contain such an enormous amount of infection under natural conditions. It is justifiable to assume that if 60° C. for twenty minutes is sufficient to destroy the infectiveness of such milk when injected into the peritoneal cavity of a guinea pig, any ordinary market milk after such treatment would be safe for human use by the mouth so far as tubercle bacilli are concerned.

It is difficult, if not impossible, to briefly summarize the work of others upon the thermal death point of the tubercle bacillus in milk. The following table necessarily leaves out many factors:

Table No. 12.—*Showing the thermal death point of the tubercle bacillus as found by various investigators.*

Investigator.	Killed at—	Not killed at—
Martin, 1882		80°.
May, 1883	By cooking	
Sormani, 1884	Boiling, 5 minutes	90° for 10 minutes.
Schill and Fisher, 1884		100°.
Voelsch, 1887		100°, boiling twice.
Yersin, 1888	60°, 10 min. (—spores). 60°, 10 min. (+spores).	
Bitter, 1890	68°, 20 minutes.	
Bang, 1891	70°, 5 min. (enfeebles). 60°, 5 min. (sometimes enfeebles 80° (sometimes kills) 85° (always kills)	
Bonhoff, 1892	60°, 20 minutes	50°, 60 minutes.
Gancher and Ledeux-Lebard, 1892	60°, 5 min. (attenuates) 70°, 1 minute (kills)	
Forster, 1892	60°, 6 hours 95°, momentary	55°, 3 hours. 60°, 45 minutes. 80°, momentary.
De Man, 1893	55°, 4 hours 60°, 1 hour	60°, 45 minutes.
Schroeder, 1894	60°, 15 minutes	
Woodhead, 1895	50°, 15 hours 60°, 8 hours 60°, 45 minutes 70°, 45 minutes 70°, 2½ minutes	90° (results contradic'y)
Marshall, 1899	68°, 20 minutes	60°, 10 minutes.
Th. Smith, 1899	60°, 15 to 20 minutes.	
Morgenroth, 1900	55°, 3 hours	70°, 10 minutes. 100°, momentary.
Kobrak, 1900	50°, 4 hours	
Beck, 1900	100°, 3 hours	100°. 80°, 30 minutes.
Galtier, 1900		85°, 6 minutes.
Russell and Hastings, 1900	60°, 20 minutes	
Herr, 1901	65°, 15 minutes	80°, 5 seconds.
Hesse, 1901	60°, 20 minutes	
Levy and Bruns, 1901	65°, 15 minutes	
Barthel and Stenström, '01		70°, 15 minutes.
Bang, 1902		60°, 15 minutes.
Tjaden, 1903	85°, 1 to 2 minutes	
Rullmann, 1903	65°, 30 minutes	60°, 20 minutes.
Barthel and Stenström, '04	80°, 1 min. (uncoag'd).	80°, 1 min. (coagul'd).
Russell and Hastings, 1904	71°, 1 minute	
Zelenski, 1906		76°, 20 minutes.
Rosenau, 1907	60°, 20 minutes	

The above tabular statement shows that my results agree with the work of Yersin, Bonhoff, Schroeder, Th. Smith, Russell and Hastings, and Hesse in that 60° for twenty minutes is sufficient to kill the tubercle bacillus.

The lesions produced by a large mass of dead tubercle bacilli may be distinguished by their extent rather than by their character. In doubtful cases secondary inoculation is the only trustworthy method of determining whether the bacilli are alive or dead. The tuberculin test does not differentiate between the live and dead tubercles. Three guinea pigs out of eight having lesions produced by dead tubercle bacilli (killed at 100° C.) died as the result of the subcutaneous inoculation of 2 c. c. tuberculin (O. T.).

The evidence is plain that milk heated to 60° C. and maintained at that temperature for two minutes will kill the typhoid bacillus. The great majority of these organisms are killed by the time the temperature reaches 59° C., and few survive to 60° C.

The diphtheria bacillus succumbs at comparatively low temperatures. Oftentimes it fails to grow after heating to 55° C. Some occasionally survive until the milk reaches 60° C.

The cholera vibrio is similar to the diphtheria bacillus so far as its thermal death point is concerned. It is usually destroyed when the milk reaches 55° C.; only once did it survive to 60° C. under the conditions of the experiments.

The dysentery bacillus is somewhat more resistant to heat than the typhoid bacillus. It sometimes withstands heating at 60° C. for five minutes. All are killed at 60° C. for ten minutes. However, the great majority of these micro-organisms are killed by the time the milk reaches 60° C.

So far as can be judged from the meager evidence at hand, 60° C. for twenty minutes is more than sufficient to destroy the infective principle of Malta fever in milk. The *M. melitensis* is not destroyed at 55° C. for a short time; the great majority of these organisms die at 58°, and at 60° all are killed.

Milk heated at 60° C. and maintained at that temperature for twenty minutes may, therefore, be considered safe so far as conveying infection with the micro-organisms tested is concerned.

II. THE CHEMICAL CHANGES IN MILK PRODUCED BY HEAT.

The changes produced in milk by heating depend upon the degree of heat and the length of exposure. The exposure of milk to a temperature of 60° C. for a short time does not appreciably affect its chemical and physical properties. The boiling of milk, however, produces pronounced changes. These changes consists mainly of the following:

Decomposition of the proteins, and other complex nitrogenous derivatives.

Diminution of the organic phosphorus.

Increase of inorganic phosphorus.

Precipitation of the calcium and magnesium salts and the greater part of the phosphates.

Expulsion of the greater part of the carbon dioxide.

Caramelization or burning of a certain portion of the milk sugar (lactose), causing the brownish color.

Partial disarrangement of the normal emulsion and coalescence of some of the fat globules.

Coagulation of the serum albumin, which begins at 75° C.

The casein is rendered less easy of coagulation by rennin and is more slowly and imperfectly acted upon by pepsin and pancreatin.

Boiling gives the milk a "cooked" taste.

The cream does not rise well, if at all.

When the milk reaches about 60° C., a scum forms on the surface which consists of—

Fatty matter	45.42
Casein and albuminoid	50.86
Ash	3.72

Milk heated in closed vessels does not form a pellicle even when the temperature reaches 100° or 110° C. Milk heated in the open air, after cooling forms a pellicle on the surface which renews itself if it is removed. It seems that this pellicle is due mainly to the drying of the upper layer of the liquid. The cream probably does not rise well in heated milk, owing to the increase in the viscosity of the liquid in which it is emulsified.

Heat kills the ferments in milk,[1] which according to some authors play a useful role in digestion and metabolism. We have no direct knowledge of the utility of these ferments. For the child to digest and assimilate cow's milk to advantage the complex albuminous substances must first be broken down by the processes of digestion into simpler products and again synthetized. In other words cow proteins must be converted into human proteins. In this process enzymes play an essential role. We know that the digestive tube contains ferments that dissolve and break up the complex proteins into simpler substances, but concerning the rearrangement of these simpler compounds into forms best suited for assimilation we have little definite knowledge. While ferments play an active part in both the breaking down and the building up processes, it remains for future investigation to determine what particular ferments are helpful in the latter process. It has been abundantly shown by laboratory work that the ferments in milk, or most of them, at least, can withstand a temperature ranging from 60° to 65° C. for some time without material injury. Between 65° and 70° most of these are weakened in their activity, and between 70° and 80° all of them are destroyed even after relatively short exposure. (Kastle).

---

[1] Hippius (Deut. med. Woch., vol. 27, 1901, p. 481, 502) states that the oxidizing ferments are able to withstand temperatures between 60° and 65°C. for a long time, but are destroyed after a short exposure to 76°C. The lipase, or fat-splitting ferment, withstands one hour's heating at 60°C., or 62° for a short time; is weakened at 63°, and destroyed at 64°C. The proteolytic ferment withstands one hour's heating at 60° or half an hour at 65°C. The amylase withstands one hour at 60° and is only destroyed at 75°C. See also Kastle and Roberts, article No. 10, p. 307, Hyg. Lab. Bul. No. 41., P. H. & M. H. S.

Raw milk shows the peroxidase reaction, whereas milk which has been heated for one hour at 70° C., or for shorter intervals at higher temperatures, does not exhibit this reaction. In this connection Kastle and Porch[1] have observed that on heating milk to 60° C. for 20 minutes, the peroxidase reaction of many specimens of milk is not only not diminished but if anything somewhat intensified.

The following table from Kastle and Roberts' article on "Chemistry of Milk" in Hygienic Laboratory Bulletin No. 41, page 333, gives instructive data pertaining to the destruction by heating of enzymes in general.

---

[1] Journal of Biological Chemistry, Volume IV, 1908, p. 301-320.

Name of ferment	Temperature at which destroyed (°C.).
Bromelin	Weakened at 70
Caroubinase	80, weakened at 70
Cystase	60
Dextrinase	75
Diastase (plant)	80
Diastase (saliva)	65-70, slowly at 58
Emulsin	70
Enterokinase	65 (slowly)
Invertase	70, very slowly at 45-50
Laccase	60-63
Lipase	72 (Hanriot), 65-70 (Kastle & Loevenhart)
Maltase	55
Myrosin	81-85
Oenoxydase	72
Papain	82.5
Pepsin	55-57
Rennin	70, neutral; 63, faintly acid
Trehalase	64
Trypsin	75-80
Thrombase	70 (Schmidt)
Tyrosinase	55
Urease	75-80

The heating of the milk produces a decomposition of the albuminoid matter, manifesting itself by the production of a little hydrogen sulphid. This gas may also be produced by the action of micro-organisms.

It is claimed that the heating of milk renders a part of the phosphates insoluble, and that this change favors rachitis in children artificially fed with it. On the other hand it appears to be the general opinion of physicians that rachitis is the result of defective alimentation, due to causes other than the changes in heated milk.

The heating of milk for half an hour at a temperature of 150° F. (65° C.) or over, has the effect of entirely preventing the rising of the cream or of delaying it very materially. In normal milk the larger proportion of the fat droplets agglutinate into tiny globules or masses. At a temperature of 65° C. or above, these clusters are broken down and the globules are more homogeneously distributed throughout the fluid.

The cooked or scalded taste appears at about 70° C., and becomes more pronounced the higher the temperature. This is due perhaps to a decomposition of certain of the proteids in the milk. The loss of certain gases also alters the taste, so that milk heated in closed vessels has a much less pronounced flavor than if heated in open vessels.

The coagulation of milk depends upon several factors, among which are time, temperature, degree of acidity, quantity and solubility of the calcium salts, etc.

Milk curdles when it is heated to 130 or 150° C. It may also be coagulated by about 12 hours heating at 100° C.

The presence of acids favors coagulation of milk at or below the boiling point and is due to the fact that very small quantities of acid liberate the casinogen and render the calcium salts normally present in milk available for its coagulation.

Milk sometimes curdles in the process of pasteurization. This is due to the amount of acid and calcium salts which it contains. In order to avoid such accidents, Kastle advises that the only safe rule to follow is to determine the effect of heating on small samples of the milk, which it is proposed to pasteurize.

It has been observed that cooked milk coagulates with rennin more slowly than raw milk. This effect is noted often at temperatures of 80 to 90° C., but it has not been observed in milk heated to 60° for 20 minutes. The curd produced by rennin coagulation in cooked milk is softer, less tough, and more flocculent, than that produced by rennin coagulation in raw milk. This is believed to be an advantage favoring the digestibility of heated milk.

SOME PHASES OF THE SCHOOL CHILD.*

James Warren Van Derslice, M. D.

During the past few years the attention of educators has been especially attracted to the school child. At the last meeting of the American Medical Association the section on Diseases of Children appointed a committee to investigate the "Present Status of the School Child." As a member of this committee it became my duty to make an exhaustive enquiry into the conditions of the Public Schools, and school conditions of the Middle West. In correspondence with some ten thousand principals and teachers in the cities of twenty-five thousand and over, the data for this paper was gathered. The uniformity with which a recognition of stress and strain occurring in the school child during his first school year by a large proportion of the principals and teachers, coupled with the fact that in every school there was as high or a higher percentage of failures during this year of school work than in any other, is my reason for bringing this subject before this body of teachers.

It may be well for us to look at the conditions as found in the school room of the primary grade.

The number of pupils per room is found to range from forty to seventy-three, while in the rooms of the higher grades the number ranged from thirty to fifty-six. In all the schools there are from five to twenty pupils more per teacher in this grade than in any other grade. Usually the teacher is one of the younger teachers of the school. The floor space per pupil is very much smaller, there being only ten to fifteen square feet as against twenty to thirty-five square feet in the higher grades.

---

*Read at the Second Annual Meeting of the American Association of the Teachers of the Diseases of Children, Chicago, Ill., June 1, 1908.

The play ground in most cases is inadequate and in a large number of schools the only play ground is the street. In no school is there provision made for outdoor recesses in stormy weather, so that in inclement weather it is customary to omit the outdoor recess, this necessitating the confinement of the pupils for the entire session.

The light is fair to good except in the basement rooms and in rooms that are not too large. There is a persistence to have the light from the left, regardless of the sun's rays and it is found that in rooms facing the south it is necessary to have the curtains drawn a good portion of the morning or afternoon session.

In the poorly lighted rooms there is no lessening of the black board space which absorbs much of the light, though the black board work is much lessened in the modern school compared with that of a few years ago, the black board space remains the same. The use of large blocks of paper and of oil crayons would, to a marked degree, lessen the absorption of light and do away with the chalk dust nuisance, at the same time allowing for the better decoration of the school room; then the bleak appearance of the average school room could be easily and cheaply transformed into an inviting room.

It is found that in the schools where there are basement rooms, that originally there were no basement rooms intended, but the crowding of the school has caused the opening of these rooms, where no provision for such a condition was originally intended. These rooms have usually low ceilings, having no means for ventilation other than the opening of windows or doors.

In but few cities is there any organized medical inspection, and usually there is no cognizance taken of any physical defects such as defects of sight or hearing, enlarged tonsils, adenoids, etc. While all recognize that in this grade there was a high percentage of absences, due to infectious diseases, there appears no tendency on the part of the school authorities to control the spread of infectious diseases other than the requirements of the various health boards. The walls of the school room go uncleansed from year to year and the memory of man goeth not back to the time when some were calcimined. The desks are unwashed for months, and in the schools where free text books are used, the average life of a book is three to five years, the same book being used by several pupils.

Individual drinking cups are unknown, and the sanitary drinking fountain is found in but few schools, usually all pupils drinking from a common cup.

The number of pupils in this grade failing to do the work as laid down ranges from ten to thirty-two per cent. of the classes. The number of teachers recognizing a marked lowering of vitality in her pupils exceeded that of any other grade While home work for the primary grades is interdicted by most of the school boards we find that it is not uncommon for pupils in this grade to be compelled to do home work to keep up with their classes. The causes assigned by the principals and teachers for the stress and strain appearing in this grade, given according to the frequency they appear in the teachers' reports, are insufficient sleep, number of studies and amount of work required, social distractions, absences for trivial causes, age of the pupils, indifference of the parents.

In looking over the reports of the teachers, one is startled with this constantly recurring "insufficient sleep." It appears that to most parents the amount of sleep required by the young child is a matter of little consequence, and we find that the eight or nine hours of the adult is the usual amount allowed to the child, while as medical men, we believe that the minimum for the six year old child should be eleven hours and that the child should be encouraged to sleep more than this amount.

The number of studies and the amount of work required:

In regard to the curriculum, there is far more to say than can be covered in a paper of this length. That while it is easy to criticise, it is well to remember that we are dealing with a structure that has been years in the building, by the best educators of the day, and it is wise to go slowly. Very many of the principals and teachers are quite imbued with the present day antipathy to the so-called fads. The common criticism of the principals is of the supervisors of the special branches. Quite naturally these supervisors, being only interested in their special work, are prone to consider their branch as the important part of the curriculum, and urge upon the teacher the desirability of pushing their studies even to the detriment of others and perhaps to the detriment of the child. That there is a field for the supervisor of the special branches, there is no doubt, but the supervisor should be a well qualified teacher—not the product of our political system, and should rather look to the development of the child as against the excellence of production to place on exhibition for the edification of fond parents, and the ultimate injury of the child. The personal equation of the supervisor is the all important factor, and it cannot be gainsaid that the trained teacher in these special branches should be better qualified to develop the creative faculties of the child, than the average teacher, but if the desire for elegance in product is the end and aim, then the teacher is at fault. In the schedule of the school work the attention period, or the length of time that a child can apply itself to one subject is entirely lost sight of, and in making up a schedule for lesson hours, the important factors apparently are to fit in with recesses and to have the harder studies early in the session. While the length of time that a child at the various ages can profitably apply himself to any given subject has been amply demonstrated by the investigations of Gilbert, Chadwick and others, the public schools have the same lesson periods for all grades and ages. This same half hour period is used in the primary grade except in those rooms where because of the large number of pupils it is necessary to have three classes, then we find that the twenty minute period is used, this however entailing an increase in the length of the seat work to forty minutes. While teachers usually recognize the stress of a forty minute seat work period, the work is usually lightened rather than a recognition of the physiological limitations of these children to apply themselves to one subject for not more than fifteen minutes without strain of the nerve cells. That a lesson period of thirty minutes blackboard demonstration where we have the added eye-strain, must of necessity be of harm to a child of this age there can be no doubt. During this stage of development, encouragement of the child to occupations requiring the finer coordinations or application for a continued period which results not only in fatigue of the cells but in their permanent impairment is clearly an error.

That permanent injury surely follows prolonged exercise of any function, physical or mental is generally understood. That it is entirely practical and to the advantage of both teacher and pupil to have fifteen minute periods, has been sufficiently demonstrated.

That social distractions should be one of the chief causes of stress in the six year old school child, at first glance appears rather startling, but we find that the number of public entertainments in which these children take part is enormous, and the amount of nerve energy which is worse than wasted at each of these cannot be estimated. The testimony of a large number of teachers is that they can see a marked falling off in the quality of the work of pupils taking part in such entertainments for weeks.

Absences for trivial causes:

This is found to be a frequently assigned cause for stress. The parents apparently, not valuing the instruction of the lower grades as they do that of the higher grades.

The age of the pupil:

Shall the child be admitted to the public school at six years of age and to the kindergarten at five years? If our aim is to develop strong men and women, the answer to this question must of necessity be "no." The kindergartners believe that they develop along natural lines, but there we find this same failure to consider the natural development of the child and the attention period is entirely lost sight of. The fact that a child enjoys a given task is excuse for the continuing of the work beyond normal limits, and if the artistic products of the kindergarten displayed by proud parents and teachers are evidences of progress in the little peoples' training, too often they suggest the fearful cost to future development of the overstrained faculties exercised in their production. That the child enjoys it should have no more weight than that the athlete enjoys the victory in the contest which ruined his heart. The earlier education naturally should be restricted to the grosser movements of the free-limbed type, and encouragement of the child to occupations requiring the finer co-ordinations is clearly an error.

To sum up:

The schedule should be so arranged that no period shall be longer than fifteen minutes for children under nine years of age, twenty minutes for children nine and ten years of age, and twenty-five minutes for children of eleven to fourteen years of age.

There should be provided individual drinking cups or a sanitary drinking fountain.

Basement rooms should not be used as school rooms.

Where the light is questionable blackboards should be discarded and white paper and oil crayons used.

Some provision should be made for a covered area for out door recesses during stormy weather.

There should be an allowance of at least twenty square feet of floor space per pupil in the primary grades.

The walls of the school room should be calcimined each year

The desks should be washed at frequent intervals.

No teacher should have more than forty and preferably thirty pupils.

Finally—that the stress and strain to the school child in the primary grade is entirely preventable where the schoolroom and accessories are hygienic and the personal equation of the teacher is what we have a right to demand.

155 North 64th Av, Oak Park, Ill.

THE TRANSMISSION OF TUBERCULOSIS THROUGH MILK.*

By Mazyck P. Ravenel, M. D.

UNIVERSITY OF WISCONSIN, CHAIRMAN WIS. COMM. OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS, MADISON, WIS.

In accepting the very kind invitation of the president to speak before this meeting I felt it necessary to apologize for the subject selected, viz.: "The transmission of tuberculosis through milk." An enormous amount of work has been done on this subject since 1901, and the evidence has been so positive that bovine tuberculosis is transmitted to mankind not infrequently, that I felt some such apology was necessary. However, there have recently appeared several articles, one in the Journal of the American Medical Association, which is widely read and by many people accepted as authoritative, which is so misleading and so injurious that it has seemed necessary to me to again bring forward some of the facts in evidence. It is hard to understand how the Journal, with abundant means at its command, can be willing to publish such a statement as that contained in a letter to Dr. Brady of Kalamazoo, Michigan, on May 9th, 1908. Scientifically, the danger of bovine tuberculosis to mankind, and the production of the disease in mankind by the bovine germ, were absolutely demonstrated at the Laboratory of the State Live Stock Sanitary Board of Pennsylvania in 1901, by finding in the tissues of a child who had died of tuberculosis the bovine tubercle bacillus of a highly virulent type. This experience has been repeated three times in the same laboratory. Dr. de Schweinitz and Dr. Mohler, of the Bureau of Animal Industry, have also found the bovine tubercle bacillus in the tissues of human beings. Dr. Theobald Smith, of Harvard, has reported two such cases out of seven examined, and has lately found three times the bovine tubercle bacillus in tonsils removed at operation. In Europe, in addition to the private work of Febiger and Jensen, Wolff, Westenhofer, and others, both Germany and England have appointed commissions composed of experts of the highest type. The German commission found ten per cent. of cases examined by them to be due to the bovine bacillus, while the English Royal Commission found twenty-three per cent. to be due to the bovine tubercle bacillus. Among the latter if we take only those in which the history pointed to infection through the intestinal tract, forty-six per cent. proved to be due to the bovine tubercle bacillus. In addition to this, articles published from the Imperial Board of Health of Germany recently by Weber and Taute, demonstrate that the tubercle bacillus can cause not only intestinal tuberculosis, but generalized tuberculosis, a fact which had been, however, demonstrated before their paper. It seems curious and incredible that while even the Germans have been forced to acknowledge these facts by reason of overwhelming evidence, the Journal of the American Medical Association should still be teaching doubt on this subject. All over the country attempts are being made in states and cities to eradicate this scourge from cattle. Many cities have passed ordinances requiring the tuberculin test, and many others are trying to get such ordinances passed. The damage done by a single journal of widespread circulation among those who are not in a position to judge for themselves is incalculable.

---

*Read at the Second Annual Conference of The American Association of Medical Milk Commissions, Chicago, Ill., June 1, 1908.

One other point I wish to touch on in this connection: Dr. Schroeder has recently published several bulletins in which he takes the ground that the chief mode of infection of the milk by the bovine tubercle bacillus is through the feces of the animal. I agree with Dr. Schroeder entirely in his general conclusions, but feel that he is wrong in regard to this particular point. I do not doubt that this is one source of infection which should be carefully guarded against. Cows do, however cough up and scatter tubercle bacilli from their mouths, as demonstrated by me at the Laboratory of the State Live Stock Board of Pennsylvania about 1900. We also showed about the same time that the milk of cows showing no disease of the udder, either before or after death, contained the tubercle bacillus in a considerable portion of cases. In a series of experiments carried out on five cows which were under the constant supervision of several competent veterinarians, we showed that a single dose of the milk produced infection in 15.8 per cent. of the animals into which it was injected. In these experiments so far from attempting to concentrate the tubercle bacilli in the sediment or in the cream, it was thoroughly shaken in order to represent as closely as possible the milk obtained in the market. These five cows were killed when the experiment was concluded and no lesions of the udder, either macroscopic or microscopic, could be found. Other people, notably Rabinowitsch and Kempner, have obtained figures much higher than these. I feel that it can be definitely stated, on the testimony we have in hand, that the milk of cows with general tuberculosis, but without disease of the udder, can and does contain virulent tubercle bacilli in a considerable percentage of cases. With Dr. Schroeder I believe thoroughly that the unsuspected tuberculous cow may be exceedingly dangerous to public health, and there is no question that such an animal communicates the disease to others in the same barn or herd.

We can not afford to trifle with this question. Our statements must be definite and strong. We have the most abundant scientific evidence on which to take our stand, and there will always be those who from one motive or another try to belittle the importance of this question. Such people should not be handled too gently.

DEVELOPMENT OF DAIRY HYGIENE.*

Raymond A. Pearson, Commissioner of Agriculture,
Albany, N. Y.

No new and radical and practical method of producing high grade milk has been brought forward in the past year. The development during this period has been instead a further study and natural selection and wider adoption of the best of those methods which have been suggested largely within the past ten years.

The necessity of producing clean milk for less than it can be sold for has focused the efforts of a goodly number of well-trained persons on this subject. It is essential to cut off ornaments in most of our high-class dairy work and to adhere to those methods which bring good results, and which, if neglected, would be likely to cause bad results. Gradually these latter methods are becoming better understood and more widely introduced. Instead of novelties they are becoming routine. It is not necessary to mention the so-called vital requirements, as they have been referred to many times. We are witnessing also the gradual disappearance of extravagant, useless fads.

But one method of making the vital requirements better known is worthy of note. Some of our producers of certified and guaranteed milk have adopted the practice of having meetings of their employees, with plain talks about their work. These meetings are sometimes addressed by physicians and others not connected with the plant. The talks cover the details which are most important and the reason why they are important. Men do their best work when they understand it and are in sympathy with it. The award of prizes for exceptionally good work has been found worth while also.

---

*Read at the Second Annual Conference of The American Association of Medical Milk Commissions, Chicago, June 1, 1908.

Among the many economies that are being studied are the cheaper handling of the milk bottles at the dairy. One large producer is considering a system by which twelve bottles will be locked in a case and as a unit will be washed, sterilized, filled, capped and shipped.

Another large producer is studying carefully the question of suitable rations for his cows. With grain at $28.00 or more per ton, hay correspondingly high and labor also high, this has become of great importance.

Other producers are studying ways in which the cost of their product may be reduced, or at least not increased owing to the general advance of prices for materials and labor, and at the same time maintain and improve the quality of their product.

I am satisfied there is coming a greater appreciation on the part of those not in close touch with certified milk production, of what this means in the way of special training, skill, and hard work of a high character, on the part of those having charge of the work. It is comparatively easy to produce milk of acceptable quality twenty or twenty-five days of the month, but it requires the close supervision of a high-class man to produce such milk every day of the month. The slow development of appreciation of this fact, as well as the continued slow development of appreciation of the value of the milk produced under such care, supported by medical supervision, are worthy of note.

AMERICAN PEDIATRIC SOCIETY.

MONDAY—AFTERNOON SESSION.

CONGENITAL OBLITERATION OF THE OESOPHAGUS WITH THE REPORT OF A CASE.

Dr. J. P. Crozier Griffith and Dr. R. L. Lavenson of Philadelphia presented this communication. They stated that malformations of the oesophagus were very rare. Mackenzie had collected 63 cases of various varieties which were classified as follows:

(I) Complete absence of the oesophagus; seven such cases had been reported in literature.

(II) Partial or complete doubling of the oesophagus; only two cases of this kind had been reported.

(III) Direct oesophageal fistula, without other lesion; seven or eight such cases had been reported.

(IV) Stenosis. These cases were supposed to be of congenital origin, though the patients might live for many years.

(V) Congenital dilatation. This variety was usually accompanied by dilatation of the end of the stomach.

(VI) Obliteration of the oesophagus without fistula; 11 cases of this kind had been described in literature. This variety might mean that there was a patulous opening at either end of the oesophagus connected by a cord-like structure, or it might mean that even the cord-like structure could not be detected without microscopical examination. They did not know of any cases of this kind that had been reported.

(VII) Partial obliteration of the oesophagus with tracheo-oesophageal fistula. Of Mackenzie's cases 43 were of this variety and Hoppe had tabulated 59 such cases. They also had collected 10 or 11 cases of this kind.

They concluded that fistula was nearly always near the upper extremity of the oesophagus or near the lower fragment. Three cases were on record where the fistula entered the bronchus. The case that they reported had the typical history and the usual conditions were found at autopsy. The pathology of this condition was obscure. All children with this condition died. The only operation that promised anything in the way of relief was gastrostomy.

SPASMODIC STRICTURE OF THE OESOPHAGUS IN AN INFANT OF FOUR MONTHS.

Dr. Samuel S. Adams of Washington reported the case of a child who had been apparently normal until three months of age, when it began to have difficulty in swallowing. Any attempt to swallow caused regurgitation for from 16 to 24 hours. On admission to the hospital the child was fed for sometime with the tube and gained in weight. The parents then took the child and kept it home for 14 months when they again brought it to the hospital. On the second day the physician in passing the sound met with an obstruction and thought he made a false passage. Pneumonia developed and the child died. At autopsy signs of a posterior pneumonia were found and a rupture of the diverticulum. The obstruction proved to be a broken down tuberculous gland. The pathologist was not sure whether the diverticulum was caused by necrosis or by the surgeon, but inclined to the former opinion. Below the obstruction were two diverticula, one of which would easily admit a pen.

MONDAY—AFTERNOON SESSION.

DISCUSSION OF DR. ADAMS' PAPER.

Dr. Augustus Caille of New York reported the case of a lad, ten years of age who had had a stricture of the oesophagus for five years. The boy had had hydrocephalus in infancy and it was his opinion that the irritation was of central origin and would never entirely disappear. He said there was danger in using a sound or oesophagoscope. He knew of one instance in which the instrument penetrated into the pleural cavity and the patient died within a week of pneumonia.

Dr. C. B. Putnam of Boston said he had a child of three years who was unable to take any food. He died after a few days. The conditions found at autopsy were similar to those described by the author of the paper. The oesophagus had a blind ending; the lower portion opened into the trachea.

Dr. Thomas Morgan Rotch of Boston said that it was sometimes difficult to make a diagnosis between stricture of the oesophagus and pyloric stenosis as the rational signs of these conditions were almost identical. In these cases the wall of the lower part of the oesophagus was thinner and this was why there was danger of perforation. In one case of congenital stenosis where he had made an autopsy he found the oesophagus just at the entrance of the stomach ballooned and the least mechanical interference before death would have ruptured it. The greatest care should be taken in order to determine whether these cases were cases of chronic gastro-intestinal indigestion before resorting to mechanical interference.

Dr. A. Jacobi asked what was the exact site of the constriction in Dr. Griffith's case. Dr. Griffith said that it was just above the bifurcation.

Dr. Jacobi said that this was the position that gave so much trouble to the adult. Cancer had a predilection for this location. He thought embryonal conditions were responsible for this. The parts were formed separately but usually found each other and thus the tube was formed. The muscular layers in these places were incompletely developed. This was true of other parts of the digestive tract so why not of this part?

Dr. Samuel S. Adams of Washington said that no fluid was found in the bronchial tubes or outside the oesophagus in the tissues. The pneumonia had probably resulted from the inhalation of some food that the child had tried to swallow.

DEFECT OF THE VENTRICULAR SEPTUM, AND ABSENCE OF THE PULMONARY ARTERY.

Dr. Alfred Hand, Jr., of Philadelphia reported the case of a boy of three years, who was admitted to the hospital on July 10, 1907, with the statement that he had severe attacks of dyspnoea. He had never had the diseases of childhood, but had been a "blue baby." For three months before admission to the hospital he had had one of these attacks daily. At the time of admission he began having two attacks daily. He seemed to have some pain with the attacks but nothing in the way of aura. He went to sleep after each attack. The respiration was almost stertorous during the attacks. The heart action was rapid, but the noisy breathing obscured the heart sounds. These attacks lasted for about an hour. The liver reached 2 c.m. below the ribs, the spleen was not palpable and there was no ankylosis, Babinški's or Kernig's sign. In July the attacks lasted nearly two hours. There was marked dulness over the upper part of the sternum. He thought of the possibility of an enlarged thymus and gave antitoxin, but without effect. The child continued to have the attacks for several days and then had an attack that resembled angina pectoris in an adult. One-twelfth of a grain of morphine was given which caused the child to sleep. Subsequent attacks were aborted with morphine. The temperature rose from 98 to 107.4 when the patient died. An enlarged thymus was found at autopsy. The heart measured 9.5x7.5x3 c.m. and the pulmonary artery was absent. There was a defect in the membranous portion of the septum and no opening from the right ventricle except into the left ventricle. The ductus arteriosus could not be found in the septum.

DISCUSSION OF DR. HAND'S PAPER.

Dr. A. Jacobi of New York said that the dilated bronchial arteries coming from the aorta supplied the lungs and took the place of the pulmonary artery which was absent or stenosed. Some ten years ago he published such a case. The young man lived to be 29 years of age and died of hemorrhage. These cases were not very rare and not difficult of diagnosis. The circulation in these cases merely remained fetal.

RECURRENT EMPYEMA. ABSCESS OF THE LUNG DUE TO WIRE NAIL TWO INCHES LONG IN THE RIGHT BRONCHUS. OPERATION. RECOVERY. SURGICAL COMMENT.

Dr. Francis Huber presented this paper, which was read by title.

A SIMPLE METHOD OF CIRCUMCISION IN THE NEW BORN.

Dr. W. Reynolds Wilson of Philadelphia expressed himself as dissatisfied with the older methods of performing this operation because the foreskin was incompletely removed in those instances where the latter was adherent to the glans because sutures were placed irregularly and might have to be tightened so as to constrict the tissues and so we might have oedema which would cause the sutures to cut, and because of the length of time required for the operation. The operation which he proposed was first to break up the adhesions of the mucous membrane lining the glans by sweeping the point of the unopened scissors beneath the foreskin. The scissors could then be introduced beneath the prepuce and the skin divided with a division of the mucous membrane to a point corresponding to the division of the skin. Then the mucous membrane was rolled back to the corona and rendered free. The redundant folds of the skin were trimmed off with the scissors as well as the mucous membrane on either side of the incision. The skin was removed as far as the distal site of the frenum in order to avoid an oedematous flap. Gauze tape one-half inch in width with frayed edges was applied to secure the mucous membrane in position behind the corona and compressing the blood vessels. The end of the glans should be left uncovered.

DISCUSSION OF DR. REYNOLDS WILSON'S PAPER.

Dr. S. C. Cotton of Chicago thought this operation was not as popular as formerly. He had followed the method of a Jewish Rabbi, whom he had seen operate some twenty-five years ago and who was uniformly successful in his results. The method was very much like that just described. He did not recommend this method as enthusiastically as formerly.

Dr. W. Reynolds Wilson of Philadelphia, in closing the discussion, said that he used a pair of surgeon's scissors as he thought the advantage of using the knife was debatable. In one case the nurse had let go the legs of the infant and he had cut into the femoral artery. Fortunately he had finished the operation and was able to secure the proximal end of the artery, but the experience had led him to adopt the simpler operation.

PYELITIS TERMINATING IN SUPPURATIVE NEPHRITIS. CASE AND SPECIMEN.

Dr. J. Park West of Bellaire, Ohio, reported the case of a child of ten months, who was taken ill with what was supposed to be lobar pneumonia, though the diagnosis was not made until the fourth day. The crisis seemed to be passed on the sixth day. After this she entered on a second period of illness, her temperature going up to 103 without other symptoms. On the following day it was noticed that the urine was slightly acid and contained small cells and epithelial cells. On the next day the urine was like milk and water and after that like milk. Three specimens examined gave a specific gravity of 1014, 1012, 1014; there was always albumen, pus, blood cells and an abundance of epithelial cells. The quantity varied, sometimes being scant and sometimes free. The temperature went down on the second day of this period and there were no chills or sweats. There was marked soreness of the body; swelling of the face, hands, feet and later arms. The skin pitted on pressure over the tibia. Gastrointestinal symptoms of great severity appeared on the sixteenth day of her illness and persisted until her death eight days later. The urine remained milk like in color but not so clean in appearance.

At autopsy, the pelvis of the kidney was found to be thin and rough. There were small spots of distended capillaries on the surface. It was a remarkable case of suppurative nephritis. The blood vessels had a normal appearance but the capsule was invaded. There were no bacteria in the blood vessels, but they were scattered throughout the tissues. The fact that there were no changes in the glomeruli and that bacteria were present in the tubules and not in the blood vessels indicated an ascending rather than a haematogenous infection. Some of the tubules showed an extreme fatty degeneration of the epithelium and there was considerable debris in the tubules and medulla, consisting of cells and leucocytes.

DISCUSSION OF DR. J. PARK WEST'S PAPER.

Dr. Isaac Abt of Chicago advised cystoscoping the bladder in order to ascertain something of the condition of the bladder walls and the orifices of the ureters, especially in female children, as this information might be useful if one wished to know something as to the advisability of operation.

Dr. Jacobi of New York asked if gonococci were found.

Dr. West said that no examination had been made as there was no history of vulvo-vaginitis.

Dr. Jacobi said that pyelitis and vulvo-vaginitis went together and asked if the uterus had been examined.

Dr. West replied that it had not been examined.

Dr. Jacobi said that this process might be limited to the uterus for weeks without our knowledge. The mucous membrane of the uterus in young children was not smooth and offered a nidus for the gonococci. This was why a case that might seem to be cured would suddenly break out again.

Dr. Charles G. Kerley of New York related the history of a case that he had been called upon to perform an autopsy upon. Death was supposed to be due to malaria, but he found extensive cystitis and multiple nephritic abscesses.

Monday Evening, May 25, 1908.

POLIOMYELITIS ANTERIOR ACUTE (AN EPIDEMIC).

Dr. Henry Koplik of New York presented this communication. He said that the recent epidemic of this disease in New York City and the vicinity had been very extensive. The State Board of Health had registered 1,200 cases but it was believed that there were many more. There seemed to be nothing unusual in climatic or hygienic conditions to account for the epidemic. It was widely distributed, appearing in fashionable quarters as well as among the poorer localities. In many instances the disease did not manifest itself just as we were accustomed to see classical cases of poliomyelitis. Sometimes the disease resembled meningitis though there were points that did not resemble meningitis. The cases that recovered seemed to be cases of neuritis.

There were three distinct classes of cases. In the first, the cerebral, the child would suddenly go into a state of unconsciousness and would develop paralysis of the extremities. This would be followed by symptoms referable to the medulla. There might be difficulty in breathing and swallowing, increased coma and paralysis, followed by death. The findings in the cerebral cases corresponded to those described by Harvey. The neurotic cases were peculiar in having pains in the joints and because of hyperaesthesia. They were helpless but their recovery was complete so the cord was not affected, only the nerve trunks. In many cases only polynuclear cystosis was found at autopsy. In the cerebral cases the sensorium was clear when the patients were conscious. Where paralysis was permanent the atrophy of the muscles was very rapid in this epidemic. There were varying degrees of recovery. Some cases recovered completely, some walked but the upper extremities remained paralyzed and some recovered with contractures. In some cases there was intestinal disturbance and in some tonsillar infection. Dr. Koplik thought that the nomenclature of the disease should be revised. As to treatment hot baths and massage were of value. Where there was pain along the nerve trunks electricity sometimes aggravated the symptoms. He had found intramuscular injections of strychnine valuable in cases of complete paralysis. The principle was to keep up the tone of the muscle and wait for recovery.

EARLY SYMPTOMS OF THE RECENT EPIDEMIC OF POLIOMYELITIS.

Dr. L. E. LaFetra of New York considered this phase of the subject. He said that during this epidemic many cases of poliomyelitis were seen in which the symptoms were not those that ordinarily were accepted as typical. The following suggestive histories were obtained from 63 cases, 20 in the Babies' Hospital, 13 seen by Dr. Kerley and 30 seen at the Vanderbilt Clinic. There was vomiting in 25 cases, constipation in 14, diarrhoea in 17, cough, tonsillitis and sore throat in 6, fever in 52. (There probably was fever in all). The fever generally lasted from two to three days. There was restlessness in 37 cases, delirium in 2;

convulsions in 4, rigidity of the neck in 7, Babinski's sign in 3, atrophy in 10 cases, stupor in 4, headache in 10 and photophobia in 3. There was pain and tenderness in the affected limb in 32 cases. The paralysis was flaccid in 58 cases and spastic in 5. The paralysis came on early in the course of the disease. In one case there was opisthotonos which existed for five days and in another case it lasted 10 days. In one case there was general anaesthesia. Lumbar puncture was done in 14 cases and from 15 to 70 cc. of fluid was removed. The fluid was clear in every instance. There were cells and mononuclears in only two cases. The diagnosis was especially confusing when acute meningitis was attended with irritative symptoms. The name Heine Mendin Disease had been suggested by Wickman and the following classification proposed: 1. Ordinary paralysis. 2. Progressive paralysis (Landry's). 3. Bulbar paralysis. 4. Acute encephalitis. 5. Atoxic form. 6. Polioneuritis. 7. Meningeal form. 8. Abortive form.

A CASE OF APPARENTLY TUBERCULAR MENINGITIS BUT IN WHICH THE AFTER HISTORY MADE IT PROBABLE THAT THE DIAGNOSIS WAS A MISTAKEN ONE.

Dr. C. W. Buckingham of Boston reported the case of a boy, aged 17 months, who had malaise for a week or two with cephalic cries. A physician was called because there was some shuffling with one foot in walking. Within the next four days vomiting and convulsions occurred. The pupils were dilated, the left being more dilated than the right. There was also strabismus, unequal knee jerks, Kernig's sign, Babinski's in a less degree and retraction of the head. On lumbar puncture 10 or 12 cc. clear colorless fluid ran out, the first under considerable pressure. The report of the pathologist showed a clear, colorless fluid, the smears stained by Wright's method showing 89 cells, all but three of which were lymphoid. The diagnosis of chronic, inflammatory, tubercular meningitis was made. The child seemed to recover. This was one of the few cases of cerebro-spinal meningitis where there were prodromal symptoms and one of the few where the fluid contained an excess of mononuclear cells.

ELECTION OF OFFICERS.

President, Dr. Putnam of Boston; First Vice-President, Dr. Isaac Abt of Chicago; Second Vice-President, Dr. Thomas S. Southwort of New York; Secretary, Dr. Samuel S. Adams of Washington, D. C.; Treasurer, Dr. J. Park West of Bellaire, O.; Member of Council, Dr. Alfred Hand, Jr., of Philadelphia; Recorder and Editor, Dr. L. E. LaFetra of New York. Next place of meeting, Lenox, Mass.

Monday—Evening Session.

DISCUSSION OF POLIOMYELITIS.

Dr. L. Emmett Holt of New York said that a committee had been appointed by the medical societies of New York City for the purpose of studying the recent epidemic of poliomyelitis. So far as he could learn there had been about 3,000 cases. The disease was not limited to New York City. The points in the epidemic that had struck him were, the groups of cases occurring together; the number of cases that entirely recovered; the number that died for we were accustomed to think of this as an affection that did not cause death, the disappearance of the disease with the advent of the month of October. He thought we would have to admit that the disease was mildly contagious. They had sent fluids to the Rockefeller Institute and the findings were negative from every point of view. He had just seen two cases of polioencephalitis that ran courses very much like that of poliomyelitis. These suggested that we had a disease that was an acute inflammation of the central nervous system which generally localized its effects upon the anterior horns but might affect the cerebrum without affecting the cord at all. Dr. Flexner thought the findings suggested an acute microbic infection of the spinal cord and the results suggested a toxic degeneration of the cord due to toxines produced somewhere else in the body.

Dr. A. Jacobi of New York said that he did not think that we should conclude that we had a new disease because the disease showed such a variety of symptoms. He thought that poliomyelitis was a disease of the entire nervous system and that it had a common symptom, namely, multiple small hemorrhages, which might occur in different localities. The locality of these hemorrhages determined how serious and how permanent the symptoms were. In many cases the disease was more of a polioencephalitis than a poliomyelitis. This explained the symptoms that were formerly not very common. The extensiveness of the epidemic would be a good reason for causing us to expect a greater variation in symptoms. He thought he should be content to say that poliomyelitis was a disease of the entire nervous system, which struck the system more in some places than in others. The prognosis for polioencephalitis was better than for poliomyelitis.

Dr. Isaac Abt asked what the findings were in cases that had gone to autopsy.

Dr. John Lovett Morse of Boston said that it was his opinion that there had been nothing new in the symptomatology of the recent epidemic. The analyses of a number of cases of infantile paralysis were read. He spoke particularly of two cases in which the muscles of respiration were affected; one of these died and the other recovered.

Dr. Charles G. Kerley of New York said that he had seen 43 cases. He had seen more or less poliomyelitis for twenty years and thought the last epidemic was an entirely new proposition. It was difficult to differentiate some of the cases from cerebro-spinal meningitis. The epidemic had been of wide distribution; it began at Malden as the vertex of a triangle and extended down, embracing New York City. He related one interesting case of a child who came down with acute symptoms and he developed facial paralysis. This was the only evidence of paralysis. There must have been nuclear involvement.

Dr. Henry Koplik of New York, in closing the discussion, said that the findings in two fatal cases would be published later. The cases corresponded closely to what had been described; there were areas of softening throughout the cortex, areas of hemorrhage throughout the cord and areas of softening in the cord. Poliomyelitis did not affect the course of any co-existent nervous disease.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co. Inc., Burlington, Vt., and 30 West 33rd St., New York.
Telephone, 781 Madison.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.

COLLABORATORS.

William J. Butler, M. D., Chicago, Ill.
Henry L. Coit, M. D., Newark, N. J.
Alfred C. Cotton, M. D., Albany, N. Y.
Theodore J. Elterich, M. D., Pittsburg, Pa.
LeGrand Kerr, M. D., Brooklyn, N. Y.
Walter G. Murphy, M. D., Hartford, Conn.
Meyer L. Rhein, M. D., D. D. S., New York, N. Y.
J. Ross Snyder, M. D., Birmingham, Ala.
Henry Enos Tuley, M. D., Louisville, Ky.
Charlton Wallace, M. D., New York, N. Y.
William W. Butterworth, M. D., New Orleans, La.
Thos. D. Coleman, M. D., Augusta, Ga.
Charles Douglas, M. D., Detroit, Mich.
William C. Hollopeter, M. D., Philadelphia, Pa.
H. M. McClanahan, M. D., Omaha, Neb.
John B. Rae, M. D., New York, N. Y.
Henry L. K. Shaw, M. D., Albany, N. Y.
Parker Syms, M. D., New York, N. Y.
James W. Van Derslice, M. D., Chicago, Ill.
George M. Wells, M. D., Portland, Ore.

EDITORIAL.

THE RISE IN THE VALUE OF BABIES.

Mr. John Spargo says that never in the history of the world probably—certainly not in modern times—was so much intelligent and earnest effort devoted to the welfare of children as to-day. In all civilized countries the physical, mental, and moral well-being of the children occupies a large and increasing share of the attention of thinkers and statesmen. The fact is that modern nations place a higher value upon child life to-day than they formerly did, or than any of the nations in the past.

The future value of the child depends however upon his health and a question that, sooner or later, will have to be decided is the disposition of the sick and weakly. In view of the fact that medical science has demonstrated that it is possible to raise to maturity a much greater percentage of producing individuals than in former years; we ask will parents have the right to feed the helpless babe impure milk, improperly clothe him, suffer him to exist amid unhygienic surroundings, to deny him competent medical service? Will municipalities have the right to allow impure milk to be sold, unsanitary tenements to be erected, to allow contagious disease to be improperly isolated in private dwellings and tenements?

Will the state allow these conditions tending towards a degenerate race or will it insist that the child shall be raised properly, and become a support not a burden?

ABSTRACTS

Obscure Fever in Infancy and Early Childhood.— Morse —(The Boston Medical and Surgical Journal, July 9, 1908)— speaks of fever accompanying endocarditis, typhoid fever, malaria, eczema, dentition, in the new born, toxic absorption from tonsils, and adenoids, otitis media, cervical adenitis, pyelitis, anæmia, rickets, syphilis, tuberculosis, intestinal toxæmia and autointoxication. Most important is chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes, causing a continued elevation of temperature without physical signs. Tuberculosis of other organs in early life usually runs such an acute course and is accompanied by such definite physical signs that it is difficult to overlook or mistake it. The diagnosis of chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes during life is always difficult and often impossible without the aid of the tuberculin test in some form. In cases in which the tuberculin test is inadvisable the presence of a fluctuating opsonic index may be of great value in diagnosis. A history of definite exposure to tuberculosis is also of great assistance in diagnosis. The absence of such a history does not, of course, in any way rule out tuberculosis. Judging from the frequency with which tuberculosis is found at autopsy in childhood, and from the number of healed tuberculous foci found in later life, it would seem probable that a large proportion of the obscure fevers of infancy and early childhood are due to tuberculosis. It is the author's belief, however, that hidden tuberculosis is comparatively seldom the cause of continued elevation of temperature in early childhood, and that in the majority of cases in which the fever is supposed to be tuberculous in origin, it really is due to disturbances of digestion or metabolism. The explanation of this comparative infrequency of tuberculosis as a cause of obscure fever in infancy and early childhood is presumably that at this period of life tuberculosis tends to dissemination and a rapidly fatal course. Chronic latent cases are consequently relatively rare. Acute elevations of temperature, due to intestinal toxæmia, in infancy and early childhood seldom cause trouble in diagnosis, as they are almost always accompanied by marked symptoms, such as vomiting, diarrhœa, or obstinate constipation. In some instances, however, these symptoms may be so slight as to apparently not account for the fever. Long continued elevations of temperature without very evident cause in infancy and early childhood are probably most often due to a mild grade of intestinal toxæmia. Intestinal toxæmia is especially likely to occur in children who are overfed or improperly fed, and it is especially likely to develop in warm weather when the digestive powers are enfeebled by the heat and when bacterial infection of the food is more common. Lack of fresh air, sunlight, and exercise are important predisposing factors. There is considerable difference of opinion, however, as to what element or elements in the food are most likely to favor the development of this condition. Some believe it is the proteids, others the carbohydrates, and still others the fats. Certain others believe that milk is usually at the bottom of the trouble, while others attribute it to the fat in the milk. The author's experience leads him to believe that in the majority of the chronic cases there is decomposition of the proteids, and that the symptoms are comparatively seldom due to an excess of carbohydrates. Such cases usually yield fairly promptly to a milk and starch diet combined with proper hygiene and mild laxatives. The object of the milk and starch diet is to change the intestinal culture medium and to thus modify the intestinal flora. Disinfection of the intestine is impossible; sterilization of the food is of little or no value. The carbohydrate diet, however, furnishes a medium on which the putrefactive bacteria do not thrive, favors the growth of antagonistic bacteria, and thus diminishes the proteid putrefaction and intestinal autointoxication. Buttermilk is often useful in these cases for the same reason.—N. Y. Med. Jour., July 18, 1908.

The Etiology of Rickets.—(British Med. Jour., July 4, 1908)—Findlay has studied the ætiology of rickets and has arrived at the following conclusions: 1. Not one of the many theories which have been elaborated to explain the cause of rickets has been universally accepted, and they all lack, not only from the clinical but also from the experimental aspect, unequivocal proof. 2. It is some error in feeding which, in England and America, is commonly believed to bring about the disease, but it is doubtful, however, if feeding plays any important part in the ætiology of rickets. Experimentally it cannot be caused by improper feeding. 3. By confining young dogs and depriving them of exercise rickets has invariably been induced, as in experiments detailed by the writer, and that although their diet was beyond suspicion, the air which they breathed pure, and their kennels were kept scrupulously clean, whereas control animals allowed exercise, but otherwise similarly treated, did not become affected. 4. Examination of the conditions under which rachitic children are reared reveals one constant and invariable factor in their lives, namely, confinement. Alike, then, on clinical and experimental grounds, the writer concludes that confinement, with consequent lack of exercise, is the main factor in causing the disease. It is possible that there may be a toxine responsible for the immediate results, but without lack of exercise this toxine will not produce any injurious effects.—N. Y. Med. Jour., July 25, 1908.

The Thymus and Asthma.—(Gazzetta degli Ospedali e delle Cliniche, Milan)—Pedrazzini reports three cases of sudden death in young children, the so-called "thymus deaths." He reviews the literature and shows that an unusually large thymus or one with merely a part enlarged or abnormally hard may press on the organs or nerves in such a way that any accidental congestion, abnormal pushing up of the diaphragm from distention of the abdomen or irritation of the vagus, as from difficult gastric digestion, helminthiasis or intestinal disturbances, may upset the balance and induce severe suffocation or sudden death. The thymus need not be very large for this to occur. A spasmodic cough may also be caused by compression from the enlarged thymus or from an indurated patch in the thymus, as he shows by several examples. The asthma described by Richa and Kopp may also be the work of the enlarged thymus. Removal of the thymus has been done successfully, but Pedrazzini prefers chondrotomy of the first costal cartilages, close to the sternum, as affording relief from compression while the simplicity of the operation commends this technic. It usually has to be done as an emergency intervention.—J. A. M. A., June 25, 1908.

Nerve Anastomosis and Infantile Paralysis.— (Med. Record, July 11, 1908)—Osterhaus expresses his firm conviction that to nerve anastomosis we must look for the most beneficial results in many cases of infantile paralysis—results which can never be obtained from the other operative measures now in use, and which will be the means of converting into useful citizens many little sufferers who otherwise would be doomed to lifelong dependence on crutches or braces, burdens to themselves and to the community.—J. A. M. A., July 25, 1908.

Sac Method of Immunization of Cattle against Tuberculosis.— (Wiener klinische Wochenschrift, June 18)—Heymans describes a method which has been applied to 4,000 cattle since 1905, and which he believes enhances the resisting powers of the animal. He calls it the "sac method." A sac made from part of a reed is filled with 1 mg. of living tubercle bacilli, diluted with powder; the mouth of the sac is tied and collodionized, and the sac is then introduced under the skin of the animal. Tests have shown that a sac like this filled with tuberculin and placed in a vessel of physiologic salt solution allows diffusion of the tuberculin through the intact membrane of the sac. A tuberculous cow soon shows the typical reaction when a sac containing 0.5 c.c. of raw tuberculin is inserted under the skin. When the sac contains live bacilli they thrive so long as they obtain the necessary nutrient substances by diffusion. Tests on guinea-pigs have shown that the bacilli remain alive and secrete their specific substances in the organism of the inoculated animal so long as the substances which diffuse into the sac are not completely bactericidal, that is, as long as the animal's organism has not acquired adequate immunity. The sac heals in the tissues, forming a nodule resembling a tubercle. After six or eight months the nodule atrophies, the bacilli die, and if the contents of the tubercle are injected into a guinea-pig after 12 or 18 months no tuberculous infection follows. Experience shows that an animal bearing one of these sacs seems to be protected against experimental and spontaneous tuberculous infection to an extent hitherto unattained. He discusses the mechanism and cities his six previous announcements on the subject since 1904.—J. A. M. A., July 25, 1908.

Defensive Arrangements of the Body.—(Lancet, June 27, 1908)—Cheyne considers only diseases due to the entrance of parasitic organisms, with special reference to the points of difference between children and adults. There are some diseases which practically occur only during childhood; and *vice versa,* there are certain diseases common in adult life which hardly ever affect children. Again there are many infective diseases which attack both adults and children, but the young are more especially susceptible to some, while their elders are more susceptible to others. Or, again, some diseases are more virulent in children than in adults, and *vice versa.* Perhaps the most striking fact of all, and the one to which he especially draws attention, is that in diseases which are common to both children and adults the organs and tissues which are attacked by the virus may differ markedly according to the age of the patient. As instances, he cites the exanthemata, which are often spoken of as children's ailments. The pneumococcus attacks the body more readily in childhood than in adult life, i. e., the resisting power is less in children. The first line of defense resides probably in the epithelial tissues. "It clearly must be a local power residing in the epithelial cells themselves, or in the fixed cells on which they are situated, rather than any general condition such as the presence of opsonins in the blood." Children are more susceptible than adults to the gonococcus, which, moreover, in children, attacks epithelial tissues which are more or less immune in adults. Multiple abscesses of the skin and impetigo are common in children, but boils rarely occur, while in adults the reverse is the case. The second defensive arrangement he holds to be the endothelium, where they fix on the weak spots, e. g., endarteritis is common in syphilis. The local predisposition may to a considerable degree be a matter of pabulum. Ringworm of the scalp is common between 3 and 15 years, rare before and after. He suggests a difference perhaps in the chemical composition of the hairs in adults and children. Thread worms, again, are common in children, but equally rare in adults. This may be due to a difference in the secretions of the alimentary tract. Bacteria of the same species may display a special appetite for certain tissues, as fresh developments in an individual are apt to occur in connection with similar tissues. That the anatomic arrangement of various parts favors the deposit of micro-organisms can hardly be accepted as the only, or even as an important factor. The localization of the disease he considers in the main a vital question to be summed up under the term local predisposition. He dilates on this question and closes by pointing out that he has been unable to find any marked differences in the opsonic index to different organisms at various periods of life corresponding to the variations in the incidence of disease and in their course at different ages; nor has any difference in the opsonic index to various infective organisms been pointed out as regards sex, and yet there are noticeable variations in the incidence and severity of these diseases in the two sexes. He refers to Wells' observations on the opsonic index in infants (*Practitioner*, May, 1908, abstracted in the Journal, July 4, p. 80) and says that if his conclusions are found to apply to a sufficiently large number of cases they raise the question whether or not the significance of the opsonic index and opsonins generally is being properly interpreted. He asks, "May there not be some other interpretation of the variations in the opsonic index than that which is put forward by Wright and which is being so extensively translated into practice?"—J. A. M. A., July 25, 1908.

Ammonia Co-efficient in Urine.—(Bulletin of the University College of Medicine, Richmond, Va., July, 1908)—Hopkins describes a method of determining the ammonia co-efficient by direct nesslerization. The ammonia is determined by diluting the urine volumetrically until the ammonia nitrogen in the dilution is between .001 and .02 millegrams per c.c. A definite portion of the dilution is nesslerized, and the ammonia nitrogen in 1 cc. of urine computed. The total nitrogen is estimated in the same manner, first reducing the organic nitrogen to ammonium sulphate by the Kjeldahl process. The ratio between the amount of ammonia nitrogen and total nitrogen thus determined is taken as the ammonia co-efficient, as there is a possible error of 10% in the methods, he concludes that it is applicable to the determination of pathological variations only. For this purpose it answers the requirements. It is sufficiently accurate to determine variations of clinical importance, and has great advantages in its rapidity and in the simplicity of technique and apparatus used.

An Unusually Extensive Milk-Borne Outbreak of Typhoid Fever.—(Boston Medical and Surgical Journal, July 2, 1908)—C. Harrington refers to an outbreak this past spring in a suburb of Boston. Upwards of 400 cases were reported in six weeks. Of 410 cases 348 primary and 23 secondary cases occurred in families supplied by two milk-route men, referred to as F and Q. They both secured their supply from the same dairy. Investigation of the latter showed that it was all right and not the origin of the poison. Among the first of the cases reported was that of F himself, who died of the fever, as proven by autopsy. Considering that F had been ailing for a period of about two weeks before he took to his bed, but not to such an extent as to prevent him from handling the milk, it is not difficult to surmise in what manner the supply became contaminated with the exciting cause of the disease, for the hands of the average milkman do not receive the same degree of care as those of an operating surgeon, and with more or less frequent occasion for interrupting the work of handling the milk in order to respond to natural calls, specific contamination, first of the fingers and then of the milk, is very likely to occur. With the supply of Q, however, the connection is by no means clear. It was reported that Q received from the dairy which they had in common only those cans which F left for him after tasting all and selecting those which he wished for his own trade. This, however, is denied on apparently good authority, and, instead, it is said that on only two occasions, namely, March 15 and March 18, did F precede Q at the car. It is further stated that although each can was tasted before acceptance, those that were rejected were set aside and were not delivered to Q. However this may be, and whether or not F had an opportunity to infect the milk of Q on either of these two days or on those subsequent days, it is certain that there was the greatest possibility of an interchange of cans between F and Q, for it was the custom of each to return the cans to the car washed, but by no means sterilized; and after they were filled at the dairy and returned Q was as likely as F to receive cans which had been supplied to and handled and returned by F. Certain it is that the first infection did not occur at the place of production and was not due to the fault of the farmer; and equally certain it is that F, during two weeks of ambulant typhoid fever, had ample opportunity to infect his supply and to reinfect it again and again, and to spread the infection to Q's supply through the nonsterilized cans of the contractor which they used in common.—Med. Record, July 18, 1908.

Chronic Appendicitis in Children.— (Le Bulletin Médical, June 10, 1908)—J. Comby finds that appendicitis in children is comparatively frequent, and is essentially a chronic disease which may have existed for a long time with insignificant and vague symptoms before the acute attack caused a diagnosis to be made. It occurs in well nourished children who have a hereditary predisposition to the disease, and in cachectic children who have been subject to intestinal and gastric troubles all their lives. Another class of patients is that in which adenoids, tonsillitis, and nasal troubles, with enlargement of the cervical glands are frequent. It is frequently associated with cyclic vomiting and mucomembranous colitis. The chief symptoms are indigestion, lack of appetite, pains in the abdomen, and constipation. Intestinal catarrh may exist instead. Infectious diseases are very apt to cause attacks of appendicitis. The differential diagnosis has to be made from enterocolitis, hepatic and renal colic, movable kidney, and dysmennorrhea and ovarian troubles in young girls. Many surgeons claim that an operation in the interval is demanded in all cases. For the milder cases rest, attention to the diet, and to the bowels is in order as some cases become cured by sclerotic changes.—Med. Record, July 18, 1908.

Goiter in the New-Born.—(Revue de Chirurgie, Paris, June 10)—Fabre and Thévenot have found 130 cases on record. The symptoms are practically the same as in adults, and section of the isthmus or exothyropexy gives good results. These technics not only relieve the threatening compression of the air passages, but lead to the retrogression of the goiter. An inherited tendency to goiter was observed in a number of cases; preventive treatment should always be instituted; this includes good general hygiene, iodids, etc., when a woman with goiter or with goitrous children becomes pregnant. The newly born baby should be given medical treatment. If notwithstanding the attempts to relieve the congestion in the thyroid, the child still has difficulty in breathing, or if there is danger of suffocation, the surgeon should be summoned. Tracheotomy should never be considered. The goiter may appear as a severe or mild affection or fulminating, but the mild form is by far the most frequent. In the cases on record syphilis among the parents was scarcely ever noted, and no signs of syphilis could be found in the children later. The drinking water taken by the mother may be responsible for the goiter, although predisposing causes may be provided by persistence of the fetal circulation, compression during delivery and congestion from screaming or writhing.—J. A. M. A., July 18, 1908.

Paratyphoid and Melena in New-Born Infants.—(Münchener medizinische Wochenschrift, June 9)—The case reported is the first on record in which the specific paratyphoid bacillus was transmitted by the mother to the fetus; the latter at birth presented the signs of severe paratyphoid infection. The lesions were multiple foci of necrosis of the stomach, with inflammation and ulceration, enlargement of the spleen, otitis and cholecystitis and hemorrhagic diathesis. The child lived for 36 hours. The mother's sickness commenced four weeks before its birth. The predominance of the gastrointestinal lesions in this case warns against concluding as to the portal of entry of the germs from their most prominent localization in any given case.—J. A. M. A., July 18, 1908.

A Diagnostic Skin Reaction With a Tuberculin Ointment.—(Munchener medizinische Wochenschrift, Feb. 4, 1908), Moro has found that a specific reaction may be induced in tuberculous subjects by means of inunction with an ointment containing tuberculin. For this purpose he uses an ointment of anhydrous lanolin containing 50 per cent. of old tuberculin. When kept in the ice box the preparation retains its efficiency for months, and 10 g. is sufficient for about one hundred tests. The application is made to the skin of the abdomen just below the end of the sternum, or if this is not free from cutaneous lesions the neighborhood of the nipple is used. A portion of the ointment the size of a pea is rubbed in with the finger, using moderate pressure for a half to one minute. The area treated measures about five centimeters in diameter. The skin is left uncovered for about ten minutes but no dressing is applied. In negative cases the skin showed no reaction but in others a positive result was manifested by the appearance of an eruption of papules at the site of inunction. Three grades of this are distinguished. (1) A weak reaction in which from two to ten solitary, small, pale papules appear in twenty-four to forty-eight hours and vanish again in a few days. (2) Medium reaction, in which in the course of the first twenty-four hours up to one hundred or more miliary or larger red papules which may measure three millimeters in diameter appear. The skin in the neighborhood is moderately reddened but the eruption is confined to the site of inunction, itches slightly, remains unchanged for several days, and then slowly fades. (3) Strong reaction, shown by the appearance within a few hours of very numerous red papules with inflammatory base and accompanied by itching. There is exudation into some of these lesions which may measure five to eight millimeters in diameter; the eruption is not confined to the site of inunction but extends to the surrounding parts. In a few days the papules dry up and become scaly and in two weeks nothing is to be seen except a brownish pigmentation of the skin. None of the forms of reaction is accompanied by general symptoms or elevation of temperature. The author believes that the reaction is strictly specific though somewhat less sensitive than the von Pirquet cutaneous reaction or the ophthalmo-reaction. Its value as a diagnostic measure must be determined by further observations in a large series of cases. The method has the great advantage of being entirely harmless, even the itching at the site of inunction being a comparatively rare occurrence.—Med. Record, Feb. 29, 1908.

Hypersensitiveness to Antidiphtherial Serum.— The British Med. Jour., Feb. 29, 1908.—The interesting memorandum recounting Dr. R. Thorne Thorne's experience, which appeared in the Journal of January 18th, prompts me to relate my own tale of woe.

About four years ago I gave myself a prophylactic dose of antidiphtherial serum of 1,000 units in the left forearm. Nine days afterwards an urticarial rash appeared all over the left upper extremity, but nowhere else. It disappeared within a day or two.

Eighteen months ago I again gave myself a similar dose, in the same place. On the evening of the ninth day, after dinner, I suddenly came out in an urticarial eruption over the left arm, front of chest, and abdomen. The rash appeared literally in a few minutes, and was very profuse. I walked from my drawing-room into my study, a distance of a few paces, to consult Dr. Kanthack's article in Professor Sir Clifford Allbutt's *Medicine* on the subject. Before I found the reference the rash disappeared, and I was immediately seized with such faintness that I had to lie prone on the floor. In a few minutes I had sufficiently recovered to crawl upstairs on hands and knees and climb into bed. *Pari passu* with this improvement of feeling out came the urticarial rash once more all over my body, on the abdomen and thorax the wheals being as large as a good-sized plate. In a few minutes more the lips and buccal surface of the cheeks began to swell, and a most uncomfortable feeling behind the sternum and in the epigastrium became noticeable, suggesting that the oesophagus and stomach were taking part in the orgy. I passed a most unhappy night, no vomiting, like my brother sufferer, Dr. Thorne Thorne, but a continued misery of feeling that the post-sternal and epigastric pain would go if I could only bring up flatus. However, between 3 and 4 a. m. the discomfort abated, sleep came, and I awoke later in the morning feeling quite well, with the rash gone, and able to do my day's work as though nothing had occurred.

Some of the interest of these attacks lies in the questions they suggest. For instance, why should a poison, being presumably a chemical poison and not a living one (like the bacillus of enteric fever), require so long an incubation period as four to ten days before getting to work? Is it that the horse's serum undergoes some lengthy process of elaboration in some organ and that the result of this biochemical process is the peccant material?

Again, the rapid alternation of incidence of the poison is interesting, at one time appearing on the skin, at the next deserting the skin and falling upon the circulation. Sairey Gamp is fond of remarking that the child will do well because the measles rash has come out well, and all of us have doubtless noted that this, like most of her other *obiter dicta,* contains some modicum of truth. Our gouty friend, who tells us that he dreads the disappearance of the chronic squamous eczema about his shins, as he always then feels unwell, is another case in point.

Then again, why does increasing blood coagulability with calcium chloride or lactate prevent these attacks? Do they prevent the formation of the materies morbi or do they combine with it when formed and render it inert?

No tale is complete without a moral, and the moral of the "night*mares*" of Dr. Thorne Thorne and of my own is this: Never administer an injection of horse serum to an adult without at the same time prescribing some calcium lactate, to be commenced a day or two after the injection, and continued for a week.

W. Bligh, M. D. Lond.

Caterham Valley.

Convulsions in Children.—H. Lowenburg (Journal of the American Medical Association, November 23, 1907).— Convulsions *per se* do not constitute a morbid entity; the underlying cause must be sought, and failure to recognize this elementary principle of pediatric diagnosis has often led to disastrous results. Predisposing and exciting causes must be recognized, and among the predisposing causes, infancy, with its imperfectly developed nervous inhibitions, and the potent influence of heredity are especially mentioned. In diagnosing the exciting causes, it must be remembered that the attack may result from direct irritation-- irritation of the cortical motor cells or from reflex or toxic irritation of the same, or of the spinal reflex centers. In the last case the convulsion is usually tonic in character. The success in treatment directly depends on a correct etiologic diagnosis. Of the utmost importance is the determination of the temperature, the obtaining of a correct history, the age of the patient, the presence or absence of unconsciousness, the character of the onset, and the degree of involvement. Fever generally indicates some toxic condition, possibly some acute infectious disease, but often of gastrointestinal origin. Irregular temperature may suggest meningitis. Normal or subnormal temperature is possible with some toxæmias, brain disease or reflex irritation. Convulsions in a very young infant may have a different signification from those occurring in an older child. The writer is skeptical as to dentition as a frequent cause. Epilepsy should not be diagnosed until other causes are eliminated. The protean reflex causes need careful study.

The first thing in treatment is removal of the cause, but as this can not always be determined, a rational treatment is that which will control the convulsion and be most likely to remove possible causes. Very recent dietetic errors may call for emetics or washing out of the stomach. Hydrotherapeutic methods, properly carried out, are more generally effective than any others, and more good can be accomplished by colonic irrigation than any other single remedy, in the opinion of the writer. The fluid must be sterile. Balneotherapy is also very useful. Other methods failing to check the attack, the small intestine must be cleared out, and for this, full doses of castor oil are recommended as preferable. Hypnotics and antispasmodics are usually called for, and the best hypnotic is chloral hydrate, in small doses, in water, following the colonic irrigation. These remedies must be used only after the temperature has been reduced and the bowels emptied. Morphine is seldom needed. Surgical treatment is advised when needed to remove an exciting factor. Gum lancing is seldom required.—Monthly Cyc. Practical Med., Feb., 1908.

Scarlatina Associated With Pyrexia in Apparently Healthy Contact Cases.—(The British Med. Jour., Feb. 29, 1908) Bertram Thornton says of an outbreak of scarlet fever that occurred in a school where two children suffering from the disease came in contact with 229 others. That upon taking the temperatures of children exposed, 131 had temperatures of 99° and upwards and 29 of this number had temperatures between 100° and 101°. In all these cases this slight pyrexia disappeared within two or three days and there was no symptom of scarlet fever or peeling in any instance. Twenty-seven days after, the temperatures again were taken and all were normal but three, these having some slight disturbance of various organs. The writer thinks that it is difficult to resist the inference that most of these children had received a dose of scarlatinal poison, but that their powers of resistance were sufficiently great to prevent the occurrence of any of the usual symptoms except the moderate amount of pyrexia.

He suggests the advisability of taking the temperature of contact cases, those showing a rise to be carefully watched.

PUBLISHER'S NOTICE.

"THE SECRET OF SUCCESS."

The secret of success is hard, honest, continual, intelligent work—and nothing else. Unsuccessful men may doubt this—but it is safe to try.

We have worked hard, honestly and continuously, but not always intelligently. We have tried not to make the same mistake twice; we have done the best we knew and have tried to learn to do better. We mean to treat every one alike and as we would like to be treated and to *see* that others treat us fairly. When we began, we determined to borrow, owe and imitate nothing; to have one price for all and to return the purchase price, immediately and without question, to any physician who stated that our preparations were unsatisfactory. We have done this for eleven years. To-day, over fifty thousand physicians are purchasing direct from us; and the same men still in practice who bought our tablets eleven years ago, are buying them now. Our annual sale of Papayans Bell is over three hundred million tablets.

We own, free and clear, a large laboratory and nine cottages, all of which have been bought and paid for exclusively from the profits of our business.

Every year for ten years we have been obliged to enlarge our quarters. We began with just one thousand dollars and no prestige. We have had no help except the confidence of physicians for which we are deeply grateful. Our preparations have justified this confidence and we have succeeded largely because of that fact.

Bell & Company, (Inc.)
Orangeburg, New York.

BOOK REVIEWS.

THE BABY: Its Care and Development. For the use of Mothers. —By LeGrand Kerr, M. D.—Author of "Diagnostics of the Diseases of Children." Professor the Diseases of Children in Brooklyn Post Graduate Medical School; Attending Physician to the Children's Department of the Methodist Episcopal (Semy.) Hospital; Visiting Physician to the Children's Wards of the Williamsburg Hospital, and of the Swedish Hospital in Brooklyn, N. Y., etc. Published by Albert T. Huntington, Brooklyn, N. Y. Price $1.00.

This little work is for the use of mothers and the author is to be congratulated in making clear to his lay readers those things they should know. He does not intend to have the mother take the place of the physician and wisely advises them to seek the aid of the latter when necessary. The subject matter is simply and chronologically arranged so that the busy mother can easily find out just what she wants to know, and as the baby grows older and the needs for information on various points arise she has only to refer to the chapter dealing with the conditions of infantile life at that period. This is a new method and is to be highly commended.

The suggestions, as to the nursery, clothing, the bath, sleep, the common disorders of infants on "catching cold" on the sick child should be readily understood by the mother.

The work is well printed and illustrated.

Taking it all in all, it is one of the few books of this character that the physician can safely place in the hands of the young mother.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application.

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

PEDIATRICS

Vol. XX OCTOBER, 1908 No. 10

ORIGINAL ARTICLES

THE DOCTRINE OF DIFFICULT DENTITION.

By Theodore J. Elterich, M. D.,
Pittsburg, Pa.

PROFESSOR OF DISEASES OF CHILDREN, UNIVERSITY OF PITTSBURG; PEDIATRIST TO THE ALLEGHENY GENERAL HOSPITAL; PHYSICIAN TO THE HOME FOR THE FRIENDLESS; CONSULTING PHYSICIAN TO THE PITTSBURG HOME AND HOSPITAL FOR BABIES; MEMBER OF THE ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN; FELLOW OF THE PITTSBURG ACADEMY OF MEDICINE; ETC.

It is with the utmost diffidence that I resurrect a topic which has been the subject of endless controversy among physicians in the past, but the present tendency on the part of many authors and teachers of diseases of children to return to the worship of a former idol impels me to submit to you for discussion a subject trivial in itself, yet so far-reaching that the lives and health of many infants depend upon a proper conception regarding the development of the teeth in young infants.

The history of the natural sciences furnishes an interminable number of examples of pertinacity of adherence to long existing preconceived ideas and doctrines which, remaining unchallenged, have gradually become the accepted teachings. Even after their basic principles have one by one been displaced by well founded arguments and facts, there are still some who will persistently adhere to these ideas, illogical though they may be.

There is no subject in medicine concerning which there is so much ignorance, absurd notions and superstitious beliefs, as dentition. It is to be regretted that these ideas are not confined to the laity, but are also shared by physicians, at least to a certain extent. There seems to be, however, a lack of unanimity among the members of the profession who are of the opinion that dentition gives rise, either directly or indirectly, to symptoms and diseases. Some believe that dentition produces diarrhoea, but at the same time are unwilling to admit the possibility of a "tooth cough." Others are satisfied that paralysis, convulsions, cough and diarrhoea result from dentition, but are positive that no fever ever accompanies this process. Some bring certain ophthalmias and exanthems in direct causal relation to the appearance of the eye and stomach teeth, etc.

The opinion that the first dentition produces disease was held at all times, and by all nations and classes of people. The Hindoo mother of a thousand years ago, sought to ward off the evils of dentition from her offspring by incantations and prayers, much the same as the young mother of the present day places a string of beads around the neck of her infant in order to abort, or at least to mitigate the health destroying influence of teething.

The idea of difficult dentition, therefore, originated at a time when nothing was known concerning the etiology and pathology of the diseases of infants, and it has been religiously handed down to the present generation. Many physicians still cling to this belief as if the very salvation of their souls depended upon the acceptance of this faith.

In most text books of diseases of children, the symptomatology of difficult dentition embraces fretfulness, loss of appetite, increased salivary secretion, catarrhal stomatitis, constipation, diarrhoea, slight elevation of temperature, in mild cases. In severe cases, the symptoms are much more aggravated and there may be severe attacks of acute indigestion. In addition, there may also be otitis, meningitis, bronchitis, convulsions, local spasms and paralyses, and cutaneous eruptions.

On the other hand, however, nearly all observers candidly admit that at least fifty per cent. of children cut all their teeth without any visible symptoms, and also admit that all children cut *some teeth* without any disturbance of the general health. One may pertinently ask under what circumstances does a normal physiological process like dentition give rise to pathological symptoms? Does the development of one group of teeth differ from that of another? Is it because the development of an incisor tooth is different from that of a molar that diarrhoea accompanies the eruption of the one but not that of the other? No one can deny that the development is the same in the one as it is in the other.

For some reason the eruption of the six year molars has entirely escaped the notice of the adherents of the difficult dentition theory. These teeth have never been brought into causal relation to any of the diseases occurring at that particular period of life. Very seldom, indeed, have any of the permanent teeth, with the exception of the wisdom teeth, been held responsible for any mischief. Although, I believe some years ago, an enthusiast expressed the opinion that epilepsy was directly caused by the eruption of the permanent teeth.

Symptoms of an indefinite character, such as wakefulness at night, fretfulness by day, loss of appetite and general discomfort, are the most common manifestations of infantile derangements, and may be the premonitory symptoms of *any* disease. They are therefore, not at all characteristic of dentition.

The increased salivary secretion is established about the third or fifth month and commences, therefore, several months previous to the eruption of the first tooth, and simply indicates a stage of developmental activity preparing the digestive organs for the food which is to follow the nutriment destined by nature during the early months of life.

Redness, swelling and *tenderness* of the *gums* are generally held to be symptomatic of dentition. Stomatitis in teething infants is of frequent occurrence. In the vast majority of cases it occurs in artificially fed babies. The use of unclean nipples and bottles, together with filthy sugar-teats, thumb and tongue sucking, not to forget the pernicious practice of "rubbing the gums through," are amply sufficient to produce inflammation of the mucus membrane. The various forms of stomatitis, such as aphthae, thrush, etc., are caused by certain well-defined and well-known micro-organisms, and they do not differ in any way from those seen in infants either before, or after the period of dentition.

Gastro-intestinal derangements, principally diarrhoea, are attributed to the eruption of the molar teeth. It is believed that the increased peristalsis is due to swallowing large quantities of saliva, the salts entering into composition of which, acts as a mild aperient. By a strange coincidence, the eruption of the molar teeth, however, occurs between the twelfth and the eighteenth months, at the time when an infant is usually weaned. Would it not be more logical to assume that gastro-intestinal diseases are due to bacterial invasion, improper foods and manner of feeding, bad hygiene, atmospheric changes, high degree of solar heat, etc., than to burden a physiological process which happens to be present? How many infants perish annually through a mistaken idea that diarrhoea is a natural accompaniment of dentition and requires no treatment! Some physicians hold the same opinion. No less an authority than Vogel has said: "A mild diarrhoea, five to six evacuations in twenty-four hours, is beneficial to teething infants for cerebral affections are thereby most surely prevented." The same author points to the fact that meningitis is one of the most frequent and fatal complications of diarrhoeal diseases. A cause for meningeal complication, not only in gastro-intestinal diseases, but in almost any disease of infancy may be found in *middle ear inflammation.* Otologists have repeatedly called the attention of the medical profession to this fact. Some years ago, Ponfick reported one hundred cases, thirty-five per cent. of which died of acute gastro-entritis, complicated with acute otitis media. In Ponfick's opinion the primary disease in many of these cases was the otitis, the gastro-intestinal disease being secondary.

Acute otitis media does not receive the consideration which it deserves at the hands of physicians in general. In my opinion it is one of the most frequent complications of diseases of infancy, and its existence should *always be suspected,* until it is eliminated by a competent otologist. All specialists in diseases of the ear unanimously agree that an otitis media may exist *without any symptoms referable to the ear.* Indeed, very serious and alarming symptoms may be present. An elevation of temperature without any apparent cause, fretfulness, discomfort, symptoms pointing to a beginning meningitis, convulsions, in short all symptoms commonly explained on the grounds of difficult dentition may be present. *Not a single author in his chapter on dentition mentions the fact of the frequency of middle ear inflammation in young infants.* This is, in my opinion, a most serious omission. It is contended by some that otitis media is due to dentition from reflex causes, but how can they explain the presence of pneumococci, staphylococci, streptococci, on the grounds of reflex irritation? Many an otorrhoea is neglected until the organ of hearing is irreparably damaged because the doctor said that "the ear would stop running after the baby had cut all its teeth."

Bronchitis, it is said, may be the result of the saturation of the covering of the chest with the saliva which flows from the infant's mouth,—a plausible view. It is also believed to be due to a nervous irritation reflected from the gums. Because an attack of bronchitis will now and then subside with the eruption of a tooth, it does not follow that the development of the tooth is the cause of the bronchial inflammation; for a mild attack of bronchitis will get well spontaneously whether a tooth is coming through or not. After an infant has begun to creep or walk, it is more exposed to atmospheric changes than in earlier life. Hence the greater frequency of catarrhal inflammation of the bronchial tubes during the second year.

Convulsions. One of the most frequent manifestations of disturbances of dentition is convulsions. Physicians, while they are willing to admit that the majority of the disturbances of dentition have no real existence, are unwilling to deny that the evolution of the teeth does not stand in causal relation to this symptom. All authorities in diseases of children agree that convulsions may be caused by sudden elevation of temperature, usually taking the place of the initial chill of the adult in the beginning of many infectious diseases. Acute indigestion is probably one of the most frequent causes of convulsions in teething infants. One of the strongest predisposing causes is rachitis. In almost all infants who have frequent eclamptic seizures without any special cause, evidences of rachitis may be readily demonstrated, and the attacks cease as soon as the treatment is directed to this disease. Because an eclamptic attack will now and then cease after scarification of the gums, it does not necessarily follow that dentition was the cause of the convulsion.

Cutaneous Eruptions. Diseases of the skin, notably eczema, are very common between the sixth and the twenty-fourth months, and like diarrhoea and convulsions may appear contemporaneously with the eruption of a tooth. The delicate and sensitive nature of the child's skin renders it susceptible to disorders from slight irritation. An inherited or acquired predisposition, defective metabolism, lack of cleanliness, the use of strongly alkaline soaps or impure toilet powders, but not dentition, may give rise to cutaneous eruptions. On more than one occasion I have seen a so-called "Tooth rash" prove to be a scarlet fever, rubella or rubeola, and in one instance nothing less than small-pox. The skin eruptions occurring during dentition do not differ in appearance, from those seen at other times. Synchronous exacerbations with the eruption of each tooth have never been definitely demonstrated.

Tradition furnishes many absurd notions and superstitions in relation to the care of children during the dentition epoch. It is said that the mothers of Brittany will not touch their infant's gums, lest the teeth grow crooked. It is also believed that the first teeth must not be thrown away when they drop out, for if any animal should find a tooth, the next one would resemble the one of the animal finding the old one.

To facilitate the eruption of the teeth and lessen the severity of accompanying diseases, various nonsensical and obnoxious measures have at one time or another been held in high repute. Daily friction of the gums with the fresh brains of hares, or with the blood from the recently wounded cock's comb, lotions, hard and soft objects, etc., have been recommended. At the present time, necklaces made of "Job's tears" are exceedingly popular. There are exactly twenty seeds to each necklace, representing either one for each temporary tooth, or, perhaps Job's twenty children.

With many physicians the treatment of difficult dentition comprises the use of "teething rings," the administration of narcotics, (often forestalled by the ignorant mother who administers opium on her own responsibility in the form of Godfrey's Cordial or Mrs. Winslow's Soothing Syrup, sometimes with fatal results), local applications of laudanum or cocain to the gums, and the *unlimited* and *unnecessary* use of the gum lancet.

Scarification of the gums for the relief of difficult dentition was first practiced by Ambrosius Paré; it soon became and is still an exceedingly popular operation. In fact no operation in the history of medicine has stood such a test of time. The gum was scarified not only once, but repeatedly for the same tooth, just as it is done at the present day. We find that no less a personage than Hunter prided himself on having scarified the gums for the same tooth not less than twenty times. Strange to say this very tooth, which was blamed to be the cause of convulsions in that particular patient, did not even protrude through the wound but obstinately remained in its hiding place for some time. In 1742, Hurlocks scarified the gums of an infant ten days old, and Van Swieten relates a case in which the tooth appeared at late as eight months after the operation. During the last century this operation was so frequently and systematically carried out that it is doubtful whether any child escaped. Unhappily, this operation was powerless to ward off the fearful ravages of dentition. According to the very men who considered this operation a necessary one, the majority of deaths occurring during the first two years of life were due to the eruption of the teeth. Berdmore (1770) claimed that at least one-half of the deaths occurring before the age of six months were due to dentition, and even during the middle of the last century, West, the famous London physician, allowed seven per cent. of his cases to die of difficult dentition.

It was not until 1797 that a vigorous protest was filed against the doctrine of difficult dentition. This was by Johann Wichman of Goettingen, Germany; later by Elsaesser, and more recently by Kassovitz and others. Wichman was of the opinion that the doctrine was the result of lack of ability to properly diagnose the various symptoms and diseases of infants; that it was very convenient to blame a factor which was always sure to be present at that period, and even in those cases in which a proper knowledge of the disease existed, it proved a very convenient scape-goat in case of a fatal termination. He demonstrated that in the majority of cases, at the place where the tooth was about to pierce the gum there was no inflammation, but on the contrary, a small white point could always be seen, which was painless on pressure. In his opinion the eruption of several teeth simultaneously did not give rise to any disturbance of the general health, nor did he believe that any disease or symptoms ever stood in causal relation to dentition.

This association is largely composed of teachers of diseases of children, and it is important for us to know what we shall teach regarding the difficult dentition theory. Shall we teach our students, all of whom are always inclined to be careless in the physical examination of children, that dentition may cause many of the ills of infancy, or shall we promulgate the views so pertinently expressed by Wichman?

The following cases will illustrate what may occur as a result of these different teachings:

An infant seven months old, previously healthy, contracted a severe coryza, bronchitis and some elevation of temperature. On the third day of the disease the infant had a severe convulsion. The attending physician attributed the convulsions to dentition and scarified the gums. On the following day the infant had several additional eclamptic seizures and a consultant was called. He agreed with the physician in attendance that the convulsions were undoubtedly of dental origin, and accordingly the gums were scarified again. The infant became comatose and developed marked symptoms of meningitis, and died. A few hours before death *there was a discharge of pus from both ears.* What would have happened had the ears been examined and a timely paracentesis performed?

Another case is that of an infant eleven months old. This patient had been ill for several weeks with very indefinite symptoms. There was fretfulness, disturbed sleep, loss of appetite, and some elevation of temperature. The stools were offensive and contained curds, mucus, etc. The parents were certain that the teeth were the cause of the child's illness, and stated this to the physician who was called to attend this patient. This physician was skeptical regarding difficult dentition and made a careful examination of the patient. In addition to the indigestion, he found some symptoms of scurvy. After correcting the diet, giving the usual remedies, there was an immediate improvement in the general condition, but the patient still had an irregular temperature ranging from 98° F. to 104.2° F. An examination of the ear was made and evidences of inflammation of both membranae tympani were present. Paracentesis did not improve the condition however, and it was decided to open the mastoids. Pus was found in both of them. The patient recovered.

The two cases are actual occurrences, and require no further comment.

If we carefully weigh the evidence and the arguments pro- and con- difficult dentition, is it not a matter of fact that all symptoms and diseases attributed to the dental evolution are either very indefinite and not at all characteristic of any particular condition, or they are manifestations of some well-defined and well-known pathological conditions and diseases? Has any adherent of the difficult dentition theory ever presented a series of cases in which all other diseases were eliminated and which were promptly cured by mere scarification of the gums? Does even th emost enthusiastic difficult dentition man point to the fact that death has ever occurred as a result of utter disregard of this theory?

Skepticism regarding the doctrine of difficult dentition does no harm; but, on the contrary, it is conducive to better results by demanding a more careful and systematic examination of infants ill from any disease.

I can truthfully state that after some twenty years of practice, almost exclusively among children, I have never seen a single case which could be properly diagnosed as difficult dentition. It may be that my diagnostic ability was often at fault, but nevertheless, I have always succeeded in tracing the evils to more rational causes. I heartily endorse the views of Wichman and agree with many others *that "dentition produces nothing but teeth."*

THE RECENT CAMPAIGN FOR CLEAN MILK IN BALTIMORE.

By J. H. Mason Knox, Jr., M. D.,
Baltimore.

When asked by our President to make a few remarks at the second session of the American Association of the Medical Milk Commission, it seemed to me that it might be well to give in outline an account of the recent campaign for a better milk legislation in Baltimore, a campaign which has just been terminated successfully through the united efforts of all the better classes in the community.

At present the Walker-Gordon farm supplies the only milk to the city which is under adequate inspection and shipped properly refrigerated. A number of other dairies handle milk carefully, but purchase it from widely separated farms not adequately inspected. The laws now in the statute books read well, but cannot be enforced because of the small number of inspectors, and it is exceedingly difficult to obtain a conviction before a local magistrate for a violation of the milk ordinance. The evident change in the attitude of the citizens of Baltimore from indifference to interest in the question of pure milk has been a gradual one, brought about partly by the results obtained through the efforts of the Health Department, and partly by the establishment of the milk stations for babies by the Thomas Wilson Sanitarium some five years ago, but more particularly, I think, by a milk exhibit held under the inspiration of Dr. Fulton, then Secretary of the State Board of Health, at which the advantages of good milk, the dangers of bad milk and the great commercial possibilities of milk products of all kinds were graphically represented. Preparatory to the exhibit lectures were given at the Johns Hopkins University for several months on some phases of the milk question, so that at present the time seemed bright for an effort to place larger powers and increased responsibility for the condition of the city's milk in the hands of our Health Department.

When the ordinance was first proposed and the character of it made known, it was received with bitter opposition, particularly on the part of the small dairymen, and was opposed by a majority of the City Council. The forces favoring the ordinance, including the Charity Organization Society, various settlement workers, the Medical and Chirurgical Faculty, district nurses, various clergymen, and many others, were carefully organized. Many citizens gave much of their time to bring about the desired result. A poll of the First or popular Branch of the City Council in which the ordinance was introduced showed 18 opposed and 6 in favor when the campaign commenced. After six weeks' work, on May 6th, the ordinance was finally passed 20 to 4 in the First Branch and unanimously in the Second. This illustrates, it seems to me, what can be accomplished by the better element in a community when enlisted in a righteous cause, and the experience in Baltimore should be an encouragement to other cities seeking to better the character of their milk supply.

Without going into the details of the ordinance, its important features may be briefly summarized:

First. Before any one can deal in milk in the city, he must make application for a license to the Health Department, and describe his plan and method of doing business in detail. He receives such a permit from the Department, only after thorough investigation.

Second. The Health Department can revoke the license for wilful or repeated violation of the ordinance after ten days' notice. From the decision of the Department there is no appeal to a police court with the wearying array of witnesses for and against the offender, which procedure usually results in the miscarriage of justice and the escape of a guilty dealer.

Third. The Health Department can adopt such regulations concerning the shipment and sale of milk as it sees fit.

Fourth. The Department can prevent the sale of milk in the city produced on any farm outside the city limits whose owner refuses to permit an inspection of the farm by city officers. These provisions may not seem drastic, but they were intended to put the responsibility of having good milk in Baltimore upon the shoulders of the Health Department and hold the Health Commissioner responsible for the character of the milk in the city.

It is felt that if the license to engage in the milk business be given only to men of an established character, it will do more to improve the city's milk supply than a very large increase in the number of inspectors who may spill milk from time to time, but have no authority at present to prevent its sale immediately after. I believe a great influence in securing this legislation was the testimony we could bring to bear from results obtained at the Milk Dispensaries in Baltimore. These dispensaries were modeled largely after the one conducted in Newark under Dr. Coit. They were carried on for several years by the Thomas Wilson Sanitarium and more recently by a separate organization, the Babies' Milk Fund Association. Eight stations are now dispensing milk in widely separate portions of the city, two of them in the parks. In these stations mothers may bring their babies and leave them in the care of the nurse throughout the day. During last year 1,000 babies have been fed and some 350,000 bottles of modified milk dispensed in addition to some 12,000 quarts of whole milk. Mothers pay, whenever possible, 10c a day for the baby's feeding. When this is impossible the milk is provided gratis.

An important feature of the work is that each child receiving the milk is under constant supervision of a trained nurse, and when the baby does not do well it is visited regularly in the home. All babies come to the dispensaries on recommendation of their physicians, and all babies discharged convalescent from the Thomas Wilson Sanitarium are referred to the station nearest their home. Through the work of the dispensaries many lives have been saved and much sickness avoided. The death rate among children using the dispensary milk, although many of the children are referred to the dispensaries already ill, is about half that of the city at large. The results actually obtained, therefore, through the dispensaries could be specifically referred to in the plea for a better general milk supply for the city.

Treatment of Inguinal Hernia in the Newborn.— (Bulletin de la Société de l'Internat des Hôpitaux de Paris, April, 1908). —Broca says that in considering hernia in young children the degree of malformation is important. Another factor is the influence of rickets on the production of hernia. The obliteration of the peritoneovaginal canal occurs at the moment of the end of pregnancy, and in a premature infant of even fifteen hours there is an incomplete closure, and a predisposition to hernia. Heredity, especially heredity from the father, also plays an important part in these troubles. It is rare to find hernia at the moment of birth, and thus it is not truly congenital. It is frequent to find these herniæ of large size containing the large intestine, either the cecum or the sigmoid portion. These herniæ also come on slowly, and cough such as occurs in a bronchopneumonia has much to do with the causation. Violent efforts may produce them as well. Diarrhea and indigestion with colic, and the crying caused thereby are also predisposing causes of hernia. Cure results from the closure of the peritoneovaginal canal. In many cases it is produced in early life by the application of a double bandage, worn day and night, followed at the age of seven to eight months by a suitable truss. This may result in a complete cure in the young infant. Or the hernia may continue to grow larger and give more and more trouble, in which case an operation becomes necessary. The large flaccid stomach and weak abdominal walls of the rachitic child are favorable to this form of hernia. The prognosis of hernia in the baby is very variable. Strangulation occurs rather frequently. A warm bath or mustard paste may cause reduction spontaneously. Severe taxis should never be used, as gangrene may be caused by it. Operation is demanded when reduction is difficult. The child must not be separated from the mother if we wish a baby to live. So the operation should not be done in a hospital that will not admit the mother with the child.—Med. Record, Sept. 5, 1908.

CHOREA IN ITS RELATION TO TONSILLITIS, RHEUMATISM AND ENDOCARDITIS.

By William J. Butler, M. D.,

ATTENDING PHYSICIAN, COOK COUNTY HOSPITAL, CHICAGO.

With a view to investigating the frequency of the association of chorea, tonsillitis, rheumatism, and endocarditis, I began, several months ago, to study my clinical material. On looking over my hospital and dispensary records, I found that the data desired were frequently lacking for reasons that are quite evident; namely, that it is often impractical to obtain necessary data from a child patient and likewise, not infrequently, from an unobservant parent. Again there should be a uniformity of procedure in securing the histories of this class of patients, in order that the presence or absence of the points desired may be always noted. As this would be possible only by the use of printed forms, which had not been in use, the records of a considerable material seemed unavailable for anything like accurate data.

I therefore determined to confine my work to such cases as came to me subsequent to this time, thirty-nine in number, which comprise the basis of this report.

While I fully appreciate that this number is insufficient for any general averages, yet I believe that a small number of cases, closely investigated and carefully examined by one observer, will develop possibly more substantial data than where a large number of cases are taken haphazard from dispensary and hospital records, cases that have been seen by a number of men who have observed them from different view-points in history and likewise in physical examination.

It is just such methods of case reporting that have developed a considerable variation in opinions on this subject, which remain as opinions showing dominating factors, as one's interest may have been more centered in neurology, or in the aspects of internal medicine.

The unsatisfactory histories obtained in this class of cases are partly due to the fact that the manifestations of rheumatism in children may be so mild as not to attract serious attention; to wit, the growing pains of children, the occasional joint-aches, etc., likewise the frequency of mild throat infections which sometimes pass unobserved.

Of the thirty-nine cases of chorea examined, thirteen were under ten years, and twenty-six between ten and fifteen years of age. Twenty-four of the children were girls and fifteen boys. This illustrates in a small way the greater frequency of chorea between the age of ten and fifteen than before this period, and likewise the greater frequency with which girls are attacked over boys.

In five, an heredity as to nervous diseases or insanity was obtainable and in twelve, a family history of rheumatism was given. On this but little stress can be placed as in any similar collection of cases the ancestry would probably show an equally large proportion of rheumatism of greater or less severity.

Inquiry into the exciting cause of the chorea revealed in six children a history of fright, and in one, school strain was mentioned. In seven cases in whom there was a history of rheumatism, and in two that had had tonsillitis, fright was given by the parent as the precipitating factor in the choreic attack.

This point is of considerable interest and has been noted by all of you. Whether it of itself would have been sufficient to elicit the chorea or whether this was rendered possible by the changes effected in the child by the rheumatic infection would be difficult to decide, as we know that at times a psychic shock alone has apparently been sufficient, and at other times rheumatism without the former factor has been followed by chorea.

In twenty-eight cases a history of tonsillitis was given. In the majority of these cases the tonsillitis antedated or followed closely the onset of chorea; in others however, a close association was not always determinable. The point should be reemphasized that mild attacks of tonsillitis may not have been reported by the patient or parent.

Of the twenty-eight cases of tonsillitis, nineteen had coincidentally or in their history evidences of rheumatism. One of the patients in whom no record of rheumatism was obtainable had endocarditis, illustrating the not unfamiliar clinical picture of tonsillitis and endocarditis.

Twenty-four of the cases had had either a distinct attack of articular rheumatism or what was probably more frequent, children's manifestations of rheumatism.

Four of the twenty-four cases were said not to have had tonsillitis. The rheumatism usually antedated the chorea, but in a few instances seemed to have announced itself after the chorea was in progress. At times no close association as to time of occurrence was ascertainable, and in these few instances the causative relation between the two conditions is rendered doubtful.

Eleven of the thirty-nine cases developed endocarditis. All but one of these had had rheumatism, there being in the eleventh case a history of tonsillitis only. In but one of the cases associated with rheumatism was a history of sore throat unobtainable. The failure in this case was probably due to the fact already mentioned, that the throat manifestations are frequently slight and easily go unobserved in the clinical picture of rheumatism, because no symptoms directing attention to the throat are complained of.

In nine cases the endocarditis involved the mitral, in one, the mitral and aorta, and in one, the aorta only. Of the change involving the mitral only, eight resulted in insufficiency and one in insufficiency and stenosis of this valve. The tenth case consisted of mitral and aortic insufficiency, and the 11th aortic insufficiency. It is quite notable that cases with endocarditis are often the subject of more than one attack of chorea.

This is to be expected if the chorea depends on the condition of the heart, since rheumatism with each successive recurrence endangers the heart, more particularly if the endocardium is already damaged from a previous attack and the chorea if it has appeared in association with the previous attack of endocarditis is likely to recur on the aggravation of the heart affection by a fresh rheumatic attack, or it may appear for the first time in connection with one of the recurring attacks of rheumatism.

Of no little interest in these thirty-nine cases is the observation that five of them who had a history of tonsillitis or tonsillitis and rheumatism, presented accidental murmurs over the cardiac area, and two of the seven cases, not associated with these infections, also had accidental cardiac murmurs.

Accidental murmurs are comparatively common in late childhood, as is likewise a comparatively larger heart area, both of which factors should be borne in mind before making a diagnosis of a valvular lesion, even in cases with rheumatism.

Tonsillitis in its various forms is a comparatively frequent infection in children, especially in those having enlarged tonsils, and while we are seldom apprehensive of metastatic localization of the infection, the fact remains that there is nothing more common clinically than the association of tonsillitis and rheumatism. That the tonsil is in all probability the point of entry of the infection in rheumatism, is now generally conceded.

It is true that gastro-intestinal disturbances are frequently seen antedating an attack of rheumatism and it is not improbable that such manifestations occasionally have their origin directly in local infection. In most cases, however, it is probable that they are secondary symptoms so commonly seen in infections in general.

This susceptibility of the tonsils to infections and the serious consequences sometimes following such results, suggests at once the prophylactic measure of their removal. Whether this latter procedure actually results in greatly reducing the frequency of rheumatism is not within my observation to substantiate, but it seems strongly probable and is a logical procedure in children disposed to tonsillar infections.

In summarizing the cases forming the basis of this report, we find a close relation existing between the clinical conditions of chorea on the one hand and tonsillitis, rheumatism, and endocarditis, on the other, in about the order mentioned.

In 71% of the cases a history of tonsillitis and in 61%, of rheumatism was obtainable, and in 28% endocarditis was present. With few exceptions a close relationship in point of time was evident between the attacks of tonsillitis and rheumatism and chorea. A refined classification in point of time between these conditions is neither practical nor necessary to establish the close relationship as we know a considerable interval may sometimes exist between their consecutive occurrence.

The Influence of Thyroidal Feeding Upon the Nitrogenous Metabolism of Children.— A. Orgler (Zeit. f Exper. Path., 1908, v. 1) performed his experiments to determine the influence of large amounts of thyroid substance upon the general health, the pulse, and respirations of infants and children. The usual reports are that they react entirely differently from adults; another object of his observations was, whether they do not react at all or simply compensate the injuries better. The amount of nitrogen and uric acid was determined; four children were given large quantities of fresh thyroidal substance, two others were given potassium iodide, and one iodeigon; the latter to determine the influence of an organic iodide, and artificially iodized albumin. In addition to the thyroid gland, the children were given only milk and zwieback. The general health of all remained perfectly good in spite of the large amount of thyroid gland given; the pulse and respiration were not influenced in the slightest. In every case a larger amount of nitrogen was excreted, however, than was taken in. In the case of the three children given iodides and iodeigon, the nitrogen excretion was not increased. The body weight in two of the children fed with thyroid decreased; in the others it remained stationary.—Am. Jour. Med. Sciences, Sept., 1908.

INSTRUCTION IN THE CARE OF BABIES TO MOTHERS AND OLDER GIRLS.

By Charles Herrman, M. D.,

ATTENDING PEDIATRIST TO THE LEBANON HOSPITAL, CLINICAL ASSISTANT IN PEDIATRICS, VANDERBILT CLINIC, NEW YORK.

Recognizing the great importance of education in any attempt to reduce the infant mortality, the New York Department of Health has recently appointed six physicians to lecture to mothers and older girls on the care of babies, at the vacation play grounds and play grounds for mothers and babies which have been established at a number of public schools. These play grounds are open during July and August and are situated in those parts of the city which contain a large tenement house population.

From the outset it was apparent that as much if not more could be accomplished by instructing the older girls as the mothers. In many cases the "little mothers" are compelled to care for the baby during the greater part of the day. Many of the mothers cannot understand English. The girls all understand the language, are intelligent and quick to comprehend. They are not only instructed themselves, but can instruct their own mothers and other mothers as well. They have plenty of opportunity to see the mistakes which are generally made and to correct them. It would be well if such instruction to girls was continued during the regular school term, so that all would profit, not as now only those who visit the play grounds.

In the "talks" to mothers and older girls, simplicity, brevity and clearness are aimed at. Only the most important points are discussed, but these are repeated and emphasized again and again, all unnecessary details being omitted. The language used is the very simplest, free from all technical terms. Brief explanations of the reasons for doing or not doing are given, and illustrations which are likely to appeal to their common sense are used. The "talk" does not last more than twenty minutes. They are then encouraged to ask any questions no matter how simple. This is followed by demonstrations by a nurse of a number of the points discussed. These render the "talks" more interesting and instructive. All the apparatus used is simple and inexpensive such as they themselves can buy and use.

The following will give an idea of such a "talk." It is never given twice in the same way, and its length is regulated by the size, character and interest shown by the audience. Of course no attempt is made to discuss all points, some of those omitted are treated when questions are asked.

A talk to mothers and older girls on the care of babies.—About fifty babies die every day (July) from "summer complaint" in this city. A very large number of these could be saved if the mothers knew just how to feed and take care of them. If you want to know anything about these matters don't ask some woman in the house, ask a doctor. He has studied and treated babies for years. Your neighbor may have a large family and still may not be able to help you. Children are not all the same. Some are so strong that they can stand almost anything; others are so weak that the greatest care must be taken. Attend to the baby yourself, no one else will take so much pains. Almost all the babies that die of "summer complaint" are under one year, so that is the time when you must be most careful. How can the babies be saved? First, a few words about care of babies in general. During the hot weather have the clothing thin and light, the baby will not "catch cold," and at other times do not bundle it up. The arms and legs must be free. Let the baby kick; that's the way it gets the exercise which it needs. If the chest is bound it cannot breathe. Give it a bath every morning in lukewarm water and during the hot weather sponge it off two or three times a day with cool water. Keep the skin dry and clean. Have the windows open from the top and bottom day and night, the baby needs plenty of fresh air. Let the baby sleep a few hours during the day as well as all night, and put only a thin covering over it. If there are flies or mosquitoes use a piece of mosquito netting. Have the room quiet. The baby needs the sleep almost as much as food. You know how badly you feel if you lose a night's rest. As soon as the diapers are wet or dirty take them off, otherwise they will make the skin red and sore. Wash them thoroughly right away and then wash your hands with soap and water, for if your fingers get dirty and then touch the milk it is spoiled.

Every mother should *try* to give the breast, nearly every mother can. The breast milk is a hundred times better than any cow's milk no matter how much you pay for it. The cow's milk is intended for calves, not for babies, it is altogether different. The mother's milk is made specially for her own baby; and if she nurses it she will be healthier herself. Very few babies die that take the breast, and more than ten times as many die that take the bottle. Babies that get the breast are bigger, stronger and healthier not only as babies but later when they grow up. Give the breast even if you have only enough for once or twice a day, for by eating plenty of good food and drinking plenty of milk the amount of breast milk can be made greater. Don't stop the breast because your neighbor tells you it is no good. Ask a doctor. If you have enough for five nursings a day you do not have to give anything else. Too much feeding is worse than too little. If you have not enough give the breast milk and the bottle, the breast milk helps to digest the cow's milk. It is better not to take the baby away from the breast during the hot weather, wait until it gets cooler.

If you must use cow's milk get the very best. The "pure" milk which you get at the grocer's for four or five cents a quart is *not* the very best. You may use it for cooking or for your own tea or coffee, but it is not good enough for the baby. If you get bottled milk at eight cents a quart it has to be heated and made weaker for small babies, so that it is easier and better to get the milk already fixed for babies at the "milk depots." All you have to do is to keep the bottles cold and put on a clean rubber nipple when you want to use one of them. Always keep the milk cold; in the ice box if you have one. Never let it stand at the window with the sun shining on it. Everything that comes near the milk must be *very* clean, the bottles, nipples and hands, for no matter how good and pure the milk is when you get it, if you are not very clean in handling it, it is spoiled for the baby.

Feed the baby regularly. Almost all grown people eat regularly three times a day, morning, noon and night. You would not think of eating every hour because you would get sick. It is even easier to upset a baby's stomach. Remember that milk is the baby's food just as you eat meat and vegetables. If it is thirsty, as it will be between meals give it water to drink, it needs it; but give the milk, breast or bottle only every three hours. It is not always hungry when it cries. It may have pain in the stomach, in which case if you give more milk it will probably have more pain afterward. Don't use a pacifier, that is a rubber nipple, to quiet the baby, find out what is the matter. If you can, have the baby sleep in a crib. If it sleeps with the mother it may lie at the breast more or less all night. A small baby may have one or two feedings at night, an older baby none. If it cries give it a little water or barley water. The baby's stomach is very small. (Pieces of card board cut in the shape and size of the stomach at various ages are used to demonstrate). If you give too often it is bound to overflow, that is to throw up. What counts is not how much the baby takes into the stomach but how much it holds and digests. A very fat baby is not always a healthy baby. Before it gets its teeth, about 7 months, it does not need anything besides milk and barley water; after that you may give it soup with barley or rice, beef juice and orange juice. No baby under one year should get raw fruit or vegetables or ice cream sandwiches. Every day I see babies getting these things. If you are eating such things don't give the baby "just a taste." One mouthful may give it diarrhoea (loose bowels) and from the diarrhoea it may die. It is better not to allow the baby to sit at the table with the rest of the family. It grabs anything; it does not know what is good for it.

If the baby throws up or has green passages from the bowels it is sick; and if it is sick it is not because it is getting teeth. Thousands of babies get their teeth without any trouble. Some mothers think it is healthy for a baby to throw up. That is not so, if it vomits it is usually because it is fed too often. If the bowels are bad, loose or green, there is something wrong with the feeding. If you are careful they will not get sick. It is much easier to prevent "summer complaint" than to cure it, for if the baby has diarrhoea it may die no matter how good the treatment may be. If it is sick don't wait, get advice from a doctor. Give two teaspoonfuls of castor oil, stop *all* the milk, breast or bottle and give barley water instead.

Many mothers who are told to feed the baby every two hours when it is born, continue to do this so that it is not uncommon to find infants nearly a year old, who are still being fed at this interval. Every three hours for babies over two months is a safe rule and is easily remembered. The methods of modifying milk usually given, are easy enough for physicians, nurses and intelligent mothers but they are not simple enough for these mothers. Only the following methods of modifying milk are demonstrated:

One part milk to two parts of barley water.
Equal parts of milk and barley water.
Two parts of milk to one part of barley water.
With the proper addition of sugar.

In addition to the answering of questions, sick cases are taken to illustrate and correct the mistakes most frequently made by mothers in feeding. The following will serve as an example:

Doctor. Has any one a sick baby in the family?
Mother. I have.
Doctor. What is the trouble?
Mother. It is vomiting all the time.
Doctor. How old is it?
Mother. Six months.
Doctor. Is it fed on the breast or bottle?

Mother. The breast.

Doctor. How often do you feed it?

Mother. Oh! I have no regular time, every hour or when it cries.

Doctor. That's the reason it vomits so much. Give it the breast only every three hours and between nothing but barley water.

The demonstrations consist of the method of:

Bathing, sponging, the care of the skin.

The proper bottles, nipples and cleansing of these.

Sterilization and simple modification of milk.

The preparation of barley, rice, and egg water.

Rectal irrigation.

250 West 88th Street.

Pasteurized Milk and the Infant Death Rate.—Mr. Nathan Straus, who has been a year in Europe preaching pasteurization, has had the satisfaction of seeing the practice adopted in many places in Austria, Germany, and England. He was frequently able to demonstrate the beneficial results following pasteurization, but nowhere were his experiments more striking and seemingly conclusive than in Sandhausen, a village of 4,000 inhabitants in South Germany. The death rate among children was very high there, and Mr. Straus was satisfied that this was due to the quality of the milk supply. He therefore made arrangements to pasteurize all the milk supplied to the inhabitants of the village. The experiment began on January 1, and the results have been most encouraging. In the first seven months of 1907 thirty children under one year of age died. In the first seven months of the present year, during which they have been supplied with pasteurized milk, only nine children died.

RACHITIS.*

PATHOLOGY.

By D. E. English, M. D.,
Mill Burn, Essex Co., N. J.

The authorities I have consulted agree in nearly all points in describing the pathology or morbid anatomy of rachitis. L. Emmett Holt gives a very satisfactory description and I shall quote his Diseases of Infancy and Childhood most extensively.

He says, while the only important anatomical changes are found in the bones, it is not to be regarded as a bone disease; but as a very complex pathological process which affects the bones, muscles, ligaments, mucous membranes, and nearly all the organs of the body, particularly those of the nervous system.

In rickets there is an exaggerated production of cartilage at the epiphyses, and excessive cell growth beneath the periosteum, while the process of ossification in these tissues goes forward slowly or imperfectly, or is entirely arrested. At the same time the absorption of the medullary layer may be even more rapid than normal. The unnatural flexibility of rachitic bones is due to this deficient ossification. These lesions resemble those of chronic inflammation. The most marked changes are at the extremities of the long bones. In the long bones instead of there being one-third organic and two-thirds inorganic matter, there is found to be two-thirds organic and one-third inorganic matter. Sometimes the legs, sometimes the arms, sometimes the ribs are most affected. The most constant change is the enlargement of the epiphyses of the long bones, most striking in the lower extremities of the radius and tibia. The width of the epiphyses is sometimes doubled, and all sharp angles, prominences and borders are rounded off. The normal curves of the shafts are exaggerated, the deformity being increased by muscular action, unnatural posture, or atmospheric pressure. The principal change in the flat bones is the production of large bosses, or prominences, due to the thickening of the bone, usually about the centre of ossification. The epiphyseal changes result in arrested growth in length, rachitic bones being usually much shorter than normal. Increased vascularity is seen in the bosses upon the flat bones, at the extremities of the long bones, and upon stripping the periosteum from the shaft. The cartilaginous layer which unites the epiphysis and the shaft is very much enlarged, both in width and thickness, the latter sometimes being four or five times the normal. This cartilaginous layer is of a bluish color, and rather softer than normal cartilage. On one side it blends with the cartilage of the epiphysis, on the other it presents an irregular, dentated border, and in it the calcified layers are irregular and scattered. The epiphyseal centers of ossification are enlarged, softer and more vascular than normal, thus increasing the size of the extremity of the bone. In the shaft the outer layers of bone are thickened and soft, like decalcified bone, the deeper parts being firmer, while the deepest layers may be completely ossified. The medullary canal is much more vascular than normal, its contents resembling granuation tissue. Toward the extremities the trabecular spaces are much increased in size, so that the bone appears unnaturally porous. On vertical section of one of the flat bones,—e. g., one of the bosses upon the skull,—there is found a great increase in the size of the trabecular spaces. The bosses are made up of large spongy masses, so soft as to be easily indented with the finger, and on pressure there oozes blood and serum in considerable quantity. The microscope shows at the junction of bone and cartilage in the extremities of the long bones chiefly a multiplication of new cells, and an increased vascularity. Calcified areas are seen in the midst of regions which are cartilaginous, while masses of cartilage occupy parts which should be completely ossified. In the shaft there is more or less thickening, and an increased vascularity of the periosteum. Beneath the inner layer there is excessive cell proliferation, while calcification of this new tissue is imperfect or absent, and instead of hard bone we find irregular spongy masses. In the spongy bone there is considerable thickening with an erosion of bony trabeculae, which results in the formation of large medullary spaces filled with blood-vessels and connective tissue rich in cells. After from three to fifteen months this process ceases, and is gradually replaced by ossification. Sometimes there is a distinct transformation of cartilage into bone.

---

*Read before the Summit (N. J.) Medical Society, March 27, 1908.

Condensation and contraction take place, and the bone may become harder than normal; sometimes like ivory. Its structure is never that of a healthy bone. The epiphyseal swellings slowly diminish, and may disappear; the slighter curvatures may be entirely overcome; the greater ones much lessened. The beading of the ribs becomes imperceptible; the bosses on the skull shrink, and may leave scarcely a trace of their existence. The active process is generally complete at the age of two or two and one-half years.

The visceral changes are not peculiar to rickets but are those of general malnutrition, or to mechanical interference from deformity.

Henry Koplik says:—The spleen is enlarged, and in many cases may easily be palpated below the border of the ribs. It may be increased to two and one-half times its normal size. The changes in this organ consist in a thickening of the capsule and a proliferation of the connective tissue of the organ; arteritis, thickening of the walls of the arteries, atrophy and obliteration of the Malpighian bodies, and anaemia of the organ. The liver is often enlarged, but sometimes this enlargement is more apparent than real because of the displacement downward and the rotation of the organ due to the deformity of the chest. The lymph nodes are enlarged, but not so much as in tuberculosis or syphilis, or the exanthemata. The blood shows the changes of simple anaemia.

A. Jacobi says:—Rachitis has been suspected or considered to be an inflammatory disease by Virchow, F. A. Walter, Renard, Guerin, Trousseau, Lasègue, Niemeyer, Billroth and especially by Kassowitz. F. W. Beneke finds the arteries of rachitical patients are large all through the body, and particularly the carotids. It seems probable that the changes taking place in the head are due to this anomaly. This increase in the size of the arteries is considered by Beneke to be the cause of the local increase of vascular irritation; particularly in the epiphyses with their retarded circulation. Beneke found in rachitic infants that the pulmonary artery was larger in proportion than the aorta, while the chest is contracted and lungs small. This anatomical fact is suggestive of the pathological processes so frequently found in the lung and in the neighboring lymphatics and large abdominal glands.

In the majority of rachitic children the liver, spleen and kidneys are large; in about one-half the cases the heart is large. Jacoby concludes, it seems most in consonance with the facts to regard rachitis as a constitutional or general disease, a dyscrasia affecting the nutrition of various tissues of the body, and producing disease in the osseous system which is either inflammatory, or closely allied to inflammation.

ETIOLOGY.

Jacoby, Comby, E. Pfeiffer, Zweifel, J. Lewis Smith, T. S. Southworth, I. A. Abt, C. G. Kerley, Osler, Rotch, Koplik, and Emmett Holt, all agree that the main, or the only cause of rachitis is insufficient or improper food. Most of these authors speak of a poor quality or deficient quantity of mother's milk; of prolonged nursing after the breast milk has deteriorated; of condensed milk; of proprietary foods; of feeding milk and badly cooked starch only, after early weaning; of too strong cow's milk mixtures; and of insufficient food of any kind as causes. Most agree that syphilis, tuberculosis, and other constitutional diseases in the parents are causes only in so far as they reduce the vigor and resisting power of the infant.

The lactic acid theory supported by Heitzmann ('73), Tripier ('75), Neiss ('76), Siedamgrotsky and Hofmeister ('79) seems to have been entirely abandoned. Most modern authors consider unsanitary environment and lack of sunshine and fresh air as contributing causes of more or less importance.

Jacoby says, the foetal and congenital occurrence of rickets cannot be doubted, but foetal rachitis is very rare, and its cause has not been found.

Many cases of rickets which depend on hereditary influences might be prevented or modified by attending to the parents before conception, or to the mother during pregnancy. He has known women to bear healthy, or rachitical children, according to the condition of health, or ill health, during the year preceding parturition, and says the cause of congenital rachitis must be looked for in the condition of the mother's blood.

Abt believes rickets may be congenital, especially among Italians.

Osler says there is no evidence that the disease is hereditary.

Rotch says it may be congenital.

Koplik says heredity has no influence.

Holt says there is no evidence that rickets is a hereditary disease, but later children are more apt to be affected, especially where intervals between pregnancies are short enough to deteriorate the mother's health.

Southworth and Morse believe that unhygienic surroundings have almost as much to do with the etiology of rickets as improper food.

Osler says want of sunshine and impure air are important factors.

Kerley says climate and unhygienic surroundings are not important etiological factors.

Koplik says a moist climate favors the disease.

Holt says hygienic influences play a very important role in its production.

Kerley says the most frequent cause is the use of proprietary foods; the next frequent, feeding too strong cow's milk mixtures.

Holt says the most important factor is great deficiency of fat in the food, and that when both fat and proteids are low rickets is more liable to result than when only fat is deficient. Unhygienic surroundings are next in importance to diet.

Kerley says rachitis in breast-fed infants is usually due to deficiency in proteids in the mother's milk.

Pfeiffer and others have not found any peculiarity in the breast milk.

Osler speaks of suckling a child during pregnancy as an accessory cause.

Zweifel reports that nearly all the infants in workingmen's families in Saxony were rachitic for the reason that the bread is made without salt, and that on that account the nursing women had less than the normal quantity of salt in their milk.

E. Pfeiffer found that the breast milk of mothers who had rachitic infants contained only 0.1 per cent. of chloride of lime, (altogether less lime than normal).

Rotch says it is not a common disease among native Americans.

A careful study of the pathology and etiology of rachitis as recorded by the authorities I have quoted, almost compels me to believe that we are dealing with a toxaemia of microbic origin. The arteritis, with thickening of the walls of the arteries; the enlargement of arteries; the great proliferation of small vessels; the large production of new cells; the peculiar changes in the bones, with over production of cartilage, and lack of ossification; the atrophy of muscles; the hypertrophy of internal organs, mostly a connective tissue hypertrophy, with obliteration of true glandular structure; the enlargement of the lymph nodes; the many signs of a chronic inflammation; the geographical distribution of the disease; the influences of climate and environment; the time limit of the disorder, although the food and environment may continue as unsuitable as before; —this does not appear to me to be a picture of starvation, but of a specific disease. The blood in the early stages of rickets does not seem to have been carefully studied as yet. While hereditary influences, parental disease, unsanitary life and environment; improper food, and insufficient food, may all be predisposing causes in so far as they weaken the infant's powers of resistance, I believe it will be found that the disease itself is caused by microbic toxins.

BIBLIOGRAPHY.

1. Abt, Isaac A., Jour. A. M. A. Vol. L, No. 2, p. 93.

2. Holt, L. Emmett, Diseases of Infancy and Childhood, Second Edition, 1897.

3. Jacobi, Abraham, Therapeutics of Infancy and Childhood, Third Edition, and System of Medicine, 1884.

4. Kerley, Charles G., The Treatment of Diseases of Children, 1907, and Jour. A. M. A., Vol. L, No. 2, p. 93.

5. Koplik, Henry, The Diseases of Infancy and Childhood Second Edition, 1906.

6. Morse, J. Lovett, Jour. A. M. A., Vol. L, No. 2, p. 93.

7. Osler, William, The Practice of Medicine, Fourth Edition, 1902.

8. Rotch, Thomas M., Pediatrics, 1905.

9. Smith, J. Lewis, An American Textbook of the Diseases of Childhood, 1895.

10. Southworth, Thomas S., The Importance of the Early Diagnosis and Treatment of Rachitis, Jour. A. M. A., Vol. L, No. 2, p. 89.

REPORT OF A CASE OF HAEMORRHAGIC NEPHRITIS COMPLICATING MUMPS.

By J. E. Hunt, M. D.,

ASSISTANT PROFESSOR PEDIATRICS, UNIVERSITY OF KANSAS.

As all authorities seem to agree that mumps is very rarely complicated with or followed by kidney lesions, it would seem to be worth while to place this interesting case on record. The child, a girl, five years old, had, according to the mother, "a swelling" in the angle of the left jaw. Upon further inquiry it was learned that there had been considerable malaise for a number of days and probably some fever. The examination showed a very slight enlargement of the parotid in the left side, not painful to touch, no inability to open mouth. But with this lack of symptoms the child complained of pain in the back of the neck. Temperature by mouth was 102°. Upon looking at the other children the patient's twin was found to be suffering with the same conditions, only much more marked and bilateral. As it was only a very mild attack of mumps nothing more was thought of the child until a week later the mother told me that the girl was in bed, in fact had been there for three or four days and seemed disinclined to get up. At this examination the parotid was somewhat smaller, the pain in the back of the neck had gone; but for some reason the child looked ill, slight puffiness about eyes, skin very dry; pulse 120 and irregular; and no complaint of pain anywhere. The examination of the heart gave nothing save the marked irregularity of the muscular contractions. Bowels had moved well and as far as known the urine passed normally. However I obtained a small quantity of this and on examination it contained a large quantity of albumin, no sugar, and the sediment was filled with large coarsely granular casts and much blood.

For the next four days the total quantity of urine passed in twenty-four hours averaged four ounces, very red and "thick." The temperature during this time ranged from 98° to 102°, pulse very irregular; but there were no nervous symptoms, simply a marked prostration and tendency to sleep. Stimulation and restricted diet finally began to bring about a slight increase in the urine excreted, however it was not until ten days had elapsed before anything like a normal quantity was passed. The oedema which at first appeared only about the eyes gradually extended to the forehead, face, abdominal wall and feet.

As the urine seemed to be increasing each day and the child begin to be restive from restraint, she was allowed to sit up for a few minutes each day, until finally she was up most of the time, but very weak and emaciated. The urine having cleared very materially, being quite free from blood.

Two weeks after being dressed the mother reported that the urine was again very red, and upon examination it was found to contain much blood, but only an occasional cast. The general condition of the child was good. Thinking that this haemorrhage was due to the markedly anaemic condition, the blood was examined and only 50% haemoglobin found. Extract of red bone marrow was given, resulting in a total disappearance of the blood and at present the child is quite normal.

Kansas City.

AMERICAN PEDIATRIC SOCIETY.

Tuesday Morning, May 25.

PUBLIC SCHOOL EDUCATION.

Dr. Charles Gilmore Kerley of New York, the president of the society, made this address in which he considered the subject of public school education as it affected the physical and mental development of the child. There are at present 18,000,000 children in the public schools of this country and they now attend school ten months of the year, five days a week and five hours a day, so that a large part of the responsibility of rearing these children falls to the schools that had formerly belonged to the parent. These children were compelled to read more or less during the time they were in school and that by artificial light. Now the question was, what had these schools taught the children? Had they fitted them to compete for a living? Dr. Gulick's report showed that a large percentage of the pupils in the public schools were defective anywhere from 17 to 80 per cent. Formerly the children in the schools were mostly English speaking but now this was not the case. In the larger cities there were from 75 to 90 per cent. of foreign born children. The school system was seriously at fault in not teaching something of sex. Dr. Morrow was authority for saying that 75 per cent. of the population either have or have had gonorrhoea and 10 to 14 per cent. had contracted syphilis. Sixty per cent. of the morbidity among the male population was due to these infections. Thirty-five per cent. of the blindness was due to gonorrhoea and from 60 to 80 per cent. of the pelvic disorders of women were due to gonorrhoea. Dr. Kerley had known three girls who became pregnant in the thirteenth year, all of whom were ignorant of the nature of the sexual relation. It was evident that we were educating the children to the danger point. The competitive spirit was pushed to its limit and the whole atmosphere was charged with the inevitable causes of disappointment, failure and suicide. The overeducation of the unfit brought forth tastes, traits and desires that he should never have known of and was the cause of much dishonesty. Sons of tradespeople no longer would follow the calling of their fathers; all wished to become professional men and bank presidents. It would be wise to insert into the curriculum a few minutes' talk on the nobility of honest labor and to emphasize the fact that all labor was honorable except that which was badly done. Children had a right to demand better physical advantages than they were receiving at the present time. They were not taught how to live. If we were to judge the public school system by the manner in which it discharged its duty in these directions we would have to admit that it had failed in its function.

AN UNUSUAL TYPE OF NEPHRITIS IN CHILDREN.

Dr. John Lovett Morse of Boston had recently seen a number of cases of acute nephritis in children that differed from those one usually met with in that there was almost complete absence of blood and blood elements. Large numbers of small round mononuclear cells, often associated with polimorphonuclear leucocytes, were present. The comparatively large diameter of the casts was also observed. He cited a number of cases that illustrated this type of the disease; in these the amount of blood had been moderate in the beginning and had disappeared after a few days and then the urine had taken on the characteristics mentioned. He thought the cases were milder in character and of shorter duration than ordinarily, and that the prognosis was better. This class of cases might end in death, be accompanied by convulsions, or develop into the chronic type. He had never autopsied one of these cases, but probably the pathological conditions were somewhat different from those ordinarily found. It seemed likely that there were few changes in the glomeruli and that the pelvis of the kidney and the lower tubes were more involved than those higher up. The condition was probably more of a pyelonephritis than an ordinary interstitial nephritis.

RECENT DIAGNOSTIC METHODS IN CHILDREN.

Dr. L. Emmett Holt of New York presented charts to show the fever reactions to tuberculin, the tuberculin eye test (Calmette) and the tuberculin skin test (von Pirquet). Of the fever reaction to tuberculin, of the positively tuberculous, 22 were positive, one was doubtful, and one was negative. Of the cases probably tuberculous, there were 17 positive, and no doubtful or negative reactions. Of the cases probably not tuberculous, there were two positive reactions. Of the positively non-tuberculous, one gave a positive reaction, and there were 60 negative reactions. There had been no bad results among the 568 tests made. Of the tuberculin eye test (Calmette), of the positively tuberculous there were 24 reactions, three doubtful reactions, and eight negative reactions. Of the probably tuberculous cases, 15 were positive, and one was doubtful. Of the probably non-tuberculous, there were two positive reactions, six were doubtful and 508 were negative. Of the tuberculin skin test (von Pirquet's), of the positively tuberculous, seven were positive, and one was negative. Of the probably tuberculous, seven were positive, and one was negative. Of the probably tuberculous nine were positive, and one was negative. Of the probably non-tuberculous, there were 41 negative. Of the positively non-tuberculous, three were negative. As regards reliability the fever test was not so scientific.

TUESDAY MORNING SESSION.

Dr. Wm. P. Northrup of New York said that his conclusions corresponded with those of Dr. Holt. Under the direction of Dr. Trudeau he had carried out the injection test on 65 adults and did not take as cheerful a view of this test as did Dr. Holt. He expressed himself as opposed to the eye test. In regard to the skin test he said that Dr. Baldwin of Saranac Lake had suggested that there should be three points of scarification and they adopted a small instrument something like a screw driver used for eyeglasses. It removed just enough superficial skin to make a uniform place. They used broth for the first, broth plus old tuberculin 5% for the second and plus tuberculin 10% for the third.

Dr. Thomas Morgan Rotch of Boston said that they had been doing a great deal of work along this line. He showed the advantages that they had had in the way of material. He thought the fever test would not be so popular in the future as the eye or skin tests, because there were a large number of cases in which we were doubtful whether we were dealing with tuberculosis or not. There was such a large number of cases in which this test could not be used. He was uncertain if it could be used if it did not give better results than the others. He had never met with any serious results with the fever tests excepting where a gross error had been made. He thought we should be very careful as to the dosage. He had had no bad results from the eye test. His assistant had given it in one hundred consecutive cases and it seldom gave a reaction where there was not tuberculosis, and in almost every case disclosed the tuberculosis. He hoped that the skin test would be the test that we could use because it made a great deal of difference as to the rapidity with which we obtained results. They had been given small doses frequently repeated in their tests. In repeating the eye test it was better not to repeat in the same eye.

Dr. Augustus Caille of New York said that he wished to be put on record as opposing the eye test. He did not think the eye was the proper organ for experimentation. They had tried the tuberculin test on 65 cases and found it to fail in 5% of the cases. The advanced cases failed to react. He thought this test fairly unreliable and in a general way was opposed to it.

Dr. Henry Koplik of New York had found the Pirquet test useful in those cases where fever existed and the tuberculin test was ruled out. The primary dose that they used was much smaller than that used by Dr. Holt. They used 1-10 m. g. and ran it up as indicated. Their results with the Pirquet test would be published at the Tuberculosis Congress. They used one positive scarification and two controls one with salt solution and one with carbolized glycerine. He had not allowed the eye test to be used in his service. He related a case in which the eye test had apparently failed and a family put in an exceedingly awkward position. He was also opposed to it because of the danger to the eyes.

Dr. S. Mc. Hamil of Philadelphia related his experience with the eye test. He had used it in 177 cases and said that his preconceived prejudices had been confirmed. His work had been on institutional children and he had had some very disturbing results.

In 144 cases he employed the cutaneous test and the ointment test of Moro. In the earlier tests he employed the eye test and following that the ointment test; he then took the balance of the cases and employed the three tests at the same time. They made it evident that there was practically no difference in the reaction of these tests. There was uniformity of action and uniformity of degree. In 35% the reaction was most marked with the cutaneous test; in 34% most marked with the eye test and in 24% most marked with the ointment test. In 85 cases he had employed the subcutaneous test in confirmation of the others. With this test the results were positive in all but one case. The dose used was 1-10 m. g. repeated in 25% of the cases, and advanced to 1 m. g. if necessary. The reason that the percentage of reactions was so high was because he was working in an institution that was very much overcrowded and had a number of cases of definite tuberculosis. In some late reactions he had cut sections of tubercles and compared them with sections from the papules of recent reactions and his results were unlike those of Dales. They found nothing of the histology of the tubercle which he discovered. The tuberculin had been thoroughly filtered. In 20 cases he used both human and bovine tuberculins. In eight cases the reactions were the same to both; in two cases the reaction was much more marked in the bovine than in the human area. He had anticipated this result because the bovine was much weaker tuberculi than the human.

Dr. A. H. Wentworth of Boston said that in the German tables there were a good many instances of positive reactions in healthy persons. He wanted to know how they proved the so-called healthy subjects to be nontuberculous.

Dr. L. Emmett Holt of New York said, in closing the discussion, that Dr. Park said there were no deductions made between the results of one man using a half per cent. and another using a one per cent. tuberculin, because there was so much difference in strength. In regard to the positive reactions in healthy persons he said statistics were given recently comparing the tests with an equal number of autopsies, the point being to determine the latent tuberculosis. The latent tuberculosis steadily rose from the first few months to past 14 years. If they obtained a positive reaction they were very careful to find out if the patient had tuberculosis. He emphasized the importance of studying the sputum, going over it again and again. The fact that we got a positive reaction in a case that appeared to get well as in Dr. Koplik's experience did not prove that the patient did not have tuberculosis, but that the disease he was having was not due to the tuberculous lesion. He thought it was important for people to know of the existence of latent tuberculosis in order that they might take proper steps towards its treatment. The test should be applied in doubtful cases, care being taken to discriminate between latent tuberculosis and another existing infection.

FRESH AIR IN THE TREATMENT OF DISEASE.

Dr. Wm. P. Northrup of New York read this paper. Two points of value he said he wished to bring up with regard to the fresh air treatment of disease, first, the practical application of the fresh air treatment and, second, in what particular cases were they to adopt this method? The element of cold in the fresh air treatment was of value. He told of the experience of treating the tuberculous insane in New York City. They lived and slept better in the open air and it was not necessary to resort to drugs to produce sleep and to quiet them. The fever and the maniacal excitability of these patients were controlled. In the application of the cold fresh air treatment one of the first rules should be to make the patient, as well as the attendant, comfortable. Dr. Northrup then detailed the method of making a bed; a point aimed at was to prevent the cold getting up from below. The diseases that he had treated in the open air were pneumonia, scarlet fever, diseases with high temperatures, etc. Dr. Lambert of New York claimed that the open air treatment of lobar pneumonia in adults shortened the course of the disease. The open air treatment killed no one; it did not even hurt anyone. In all the doubtful and desperate cases the treatment with fresh cold air determined the balance in favor of a cure in every case.

Dr. E. E. Graham of Philadelphia said that for eight years they had been using the fresh air treatment of diseases in the Philadelphia Hospital. Hospitalism he believed to be due to lack of fresh air. When this treatment was begun, the infant mortality immediately began to lessen. Of all the factors that went for reducing infant mortality, fresh air was one of prime importance. During the past three years he said he had been treating all the severer cases of pneumonia in children of all ages in the fresh air. The results had been so different from the old plan that he now had lost the dread of pneumonia as a hospital disease. The tuberculous patients lived practically in the open air in special places. Rickets, scrofula, gastro-intestinal diseases, and many other diseased conditions had been much benefitted by this method of treatment.

Dr. A. Jacobi of New York said that in 1870 when he had proposed to the authorities of the Nursery and Child's Hospital that they board out the infants and take the curtains from the cribs and proven that of every 100 infants brought to the hospital and kept three months 100 died, he was expelled from the institution. Times had changed. Since immigration and poverty had increased we had a great deal more rickets than formerly. This was probably more due to bad air than to bad feeding. The Northern Russians and Swedes had this disease among the upper classes because the children were housed up for eight or nine months of the year.

Dr. R. G. Freeman of New York related his experience with fresh air treatment of measles. In 1907 they had had two epidemics of this disease in the Nursery and Child's Hospital, the second epidemic being very severe. Afterward the whole ward came down with bowel trouble; the children were put out doors and they had no deaths at all. Scarlet fever broke out in the measles ward, and they put all the measles cases in a closed-in piazza. These cases did remarkably well. He had also felt convinced that rachitis was a disease of asphyxiation. He was led to this conclusion because it was a disease of winter, because the cases did better in the fall, because experiments on animals had failed to produce the disease with different kinds of foods.

Dr. J. P. Crozer Griffith of Philadelphia called attention to the different meanings that the expression "fresh air" was susceptible of conveying. It sometimes meant breathing fresh air, sometimes cold air and sometimes it meant exposure of the body to cold air, as when the child with a temperature of 107 degrees and scarlet fever was exposed to fresh air for the purpose of reducing temperature. There was no discussion as to the advisability of breathing fresh air, but none of us would place an infant in a cold room and take off the covering.

Dr. C. B. Putnam of Boston said that when he first entered the Massachusetts Infant Asylum, 35 years ago, they were just beginning to farm out the babies. Now, out of 125 patients, they had only about 25 in the institution. There were a few cases better suited to hospital treatment.

Dr. E. M. Buckingham of Boston said that pneumonia patients suffering from dyspnoea were relieved by placing them out in the air when the administration of oxygen failed to give them relief.

Dr. L. E. La Fetra of New York said that in private practice one could overcome the prejudice against fresh air by using inside awnings, such as were used by tuberculosis patients; this permitted them to breathe the outside air without being exposed.

Dr. Charles G. Kerley of New York said that he had been much interested in the fresh air treatment of typhoid and had had very little trouble in applying it in private practice. The teaching in regard to tuberculosis had prepared people for this treatment. He thought the deficiency of oxygen had much to do with it but he believed in a nutritional disorder *per se.*

Dr. Samuel S. Adams of Washington said that farming out infants at the present time meant something very different from what it did at the time to which Dr. Jacobi referred. He had been surprised at the willingness of even ignorant people to carry out the fresh air treatment; he cited a case in illustration of this statement.

Dr. F. S. Churchill of Chicago thought that the laity were more willing to carry out this treatment than the profession gave them credit for. In private practice he had no difficulty and in his dispensary work he had a trained nurse visit the patients and see that the treatment was carried out.

Dr. P. J. Eaton of Pittsburg said that the nurse was an important factor in carrying out this treatment and he had been inspired by Dr. Northrup's famous paper "23" to teach nurses the benefit of this treatment. He had been lecturing to them in four hospitals.

Dr. L. Lovett Morse of Boston said they had heard a great deal about fresh air for sick babies and he wished to say that it did no harm to well ones.

Dr. A. Jacobi of New York said that the time to which he referred was not so different from the present; many of the principles of good feeding were known and taught at that time. He was still teaching practically the same things. The Department of Charities of New York City had begun at that time to farm out the babies. The results were the same in institutions today as they were at that time, but he thought common sense was beginning to prevail.

Dr. E. E. Graham of Philadelphia said that as he had pointed out the value of fresh air was appreciated by some a hundred years ago, and we were still discussing the same questions. In 1864 when the advisability of erecting a Foundling Hospital in Philadelphia was being discussed Dr. Jacobi was quoted, so that these methods had been taught by a few men for many years but as a body we were just beginning to take hold of it. If we brought as much enthusiasm to the problem of securing fresh air as we had to the milk problem we would get excellent results.

Dr. Augustus Caille of New York said that he agreed with all that had been said as to the importance of fresh air; the breathing of fresh air was the most important therapeutic agent we had. Twenty years ago he had tried to get the ladies in the the babies' wards to understand the importance of fresh air. Now they had a roof garden, part of which was open and part closed.

Dr. Henry D. Chapin of New York said that he had felt for many years that he was not living up to his light in the matter of fresh air. We had seen hundreds of babies slip through their fingers in these institutions without having the courage to express their convictions as Dr. Jacobi had done. They had the best hospital wards, the best roof gardens, the best convalescent home and yet it was the same thing; every baby under one year of age did badly. Their plan was to put the babies out in a restricted part of the country with skillful doctors and trained nurses and people that could be watched. They found that the children did better this way.

Dr. Wm. P. Northrup of New York, in closing the discussion, emphasized what Dr. Graham had said about giving more attention to the matter of fresh air. Agitation had done much toward securing pure milk supply and pure drinking water. He had spoken of the open air treatment of pneumonia purposely; he thought the body needed the stimulus of fresh cold air as much as the lungs. He did not feel sure that cold air would take the place of the bath in typhoid fever.

(*To be continued.*)

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Section on Pediatrics.

DR. WM. H. WOGLOM IN THE CHAIR.

Meeting Held Sept. 18, 1908.

I. REPORT OF CASE: CONGENITAL HEART LESION, by F. B. Van Wart, M. D.—When first seen by Dr. Van Wart, this patient was nine years old. His family history showed nothing significant. His birth was normal in every respect. At the age of two weeks, the attending physician told the child's mother that the child had "heart trouble." All his life, the boy has been troubled with shortness of breath on exertion. He has no swelling of the feet. His appetite is poor, his bowels regular and he has no cough. *Physical examination. Heart*: It is enlarged to the left and superiorly and inferiorly and to the right. There is a bulging of the precordium. The impulse is felt in the 5th intercostal space 2½ inches to the left of the median line. It is rather faint and somewhat diffuse. *The Sounds:* At the apex the first sound is replaced by a loud murmur. The second sound is not so distinct as it should be. The rhythm is regular. *Murmur:* It seems as though the greatest intensity of the murmur was over the pulmonary valve, where it is loud and blowing in character. It is systolic in time. It is transmitted to the left and up, and is heard over the base of the heart and at the left shoulder. Over the lower part of the sternum is a sound resembling a snap. The murmur is heard in the back between the scapulae. There is a thrill over the suprasternal notch. The pulse is 90, small, has no tension and the walls are not thick. It is of good force. The fingers, especially the thumbs, are clubbed. The inguinal glands are slightly enlarged. The spleen and liver are negative.

Cyanosis, which is usually present in congenital heart disease, is not present here. The murmur, the enlargement of the heart to the right, taken with the history, make it probable that this is a case of pulmonary stenosis, although there may be more than one lesion present, and autopsy usually shows more than one lesion.

II. SCIENTIFIC PAPER: THE BLOOD IN INFANCY AND CHILDHOOD, by A. D. Smith, M. D. Read by Dr. Van Wart, owing to illness of Dr. Smith.—The blood of children in health and disease differs considerably from the blood of the adult. At about the 6th year, the blood becomes nearly the same as the adult blood. In the new born the red cells number 6,000,000 per cubic millimeter. At the end of the first day, they drop to 5,500,000. At the end of the second week, they are 5,000,000, which is the normal adult count. Nucleated red cells are constantly present during the first few days of life. The haemoglobin at birth is 110%. It gradually falls until the sixth month, when it is 70%, slowly rising again to the sixth year, when it averages the same as the adult.

The white cells at birth show a count of 20,000 per cubic millimeter. At the end of the first week, they are 10,000; at the 6th month, they number 15,000; at one year of age, they are 12,000, and at the 6th year, 7,500. At birth the granular white cells are present in the proportion of 75%, the non-granular cells making up the other 25%. At the end of the first week, the granular cells have fallen to 45%, and the non-granular have risen to 55%. At the end of the third year the two varieties are nearly equal. At the sixth year, the proportion is the same as in adult life, 73% granular, and 27% non-granular.

The author of the paper then cited a large number of cases of various diseases of infancy and childhood, giving the blood findings which he had actually observed in these cases. From these observations he drew the following conclusions:

1. In gastroduodenitis there is a leukoplasia with a marked relative diminution in the granulars, and marked relative increase in the non-granulars.

2. In catarrhal appendicitis, there is usually a slight leucocytosis, but the relative proportions of the granulars and non-granulars are not changed.

3. In oxyuris vermicularis as with other intestinal parasites there is an eosinophilea.

4. In retro-pharyngeal abscess there is a marked leucocytosis, and a relative increase in the granulars and a relative decrease in the non-granulars.

5. In acute bronchitis there may or may not be a leucocytosis. There is a relative decrease in the granulars, and relative increase in the non-granulars.

6. In asthma there may or may not be a leucocytosis. There is a relative decrease in the granulars, and a relative increase in the non-granulars. There is an increase in the eosinophiles.

7. In broncho-pneumonia and in lobar pneumonia there is a leucocytosis, with a relative increase of the granulars, and relative decrease of the non-granulars. (Compare this with the count in acute bronchitis).

8. In chorea the hemoglobin is markedly reduced. There is a slight increase in the white blood cells, and a relative decrease in the granulars, and a relative increase in the non-granulars.

9. In epidemic cerebro-spinal meningitis there is a marked leucocytosis and a relative increase in the granulars, and a relative decrease in the non-granulars.

10. In splenic anemia of infancy the hemoglobin is markedly reduced. The red blood cells are reduced, but not to a degree corresponding with the hemoglobin. There is poikilocytosis, and megalocytes and microcytes, normoblasts and megaloblasts are present. There is an increase in the white blood cells, sometimes very marked. There is relative diminution or no change in the granular, and a relative increase or no rela-

tive change in the non-granulars, the eosinophiles are increased, and myelocytes are present.

11. In purpura hemorrhagica there is a reduction in the haemoglobin and red blood cells, and the blood plates are so much reduced that in some cases prolonged search fails to reveal any. The granulars are relatively decreased, and the non-granulars increased.

12. In syphilis, congenital and acquired there is an increase in the white blood cells, and a relative decrease in the granulars, and a relative increase in the non-granulars.

13. In influenza there is no increase in the white blood cells. There is a relative increase in the granulars and a relative decrease in the non-granulars.

14. In malaria there is a leukoplasia. There is a decrease in the granulars, and an increase in the non-granulars. The plasmodia are present, of course.

15. In pertussis there is a leucocytosis, sometimes marked. There is a relative decrease in the granulars, and a relative increase in the non-granulars. With the development of pneumonia there is a reversal of the relationship, an increase (relative) in the granulars and a relative decrease in the non-granulars.

16. Myelocytes and nucleated red blood cells are occasionally met with in children's blood, having no pathological significance, differing in this from the adult blood, where their presence is always pathological.

The diseases in this series in which the diagnosis can be made from the blood alone are (1) splenic anemia of infancy, (2) purpura hemorrhagica, (3) malaria, (4) pertussis. In nearly all the other diseases, however, while not furnishing the diagnosis, the blood shows itself to be of help in differential diagnosis.

In discussing this paper, Dr. Woglom emphasized the fact that pertussis can be diagnosed by the blood count in nine cases out of ten before the whoop appears.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 30 West 33rd St., New York.
Telephone, 781 Madison.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.

COLLABORATORS.

William J. Butler, M. D., Chicago, Ill.
Henry L. Coit, M. D., Newark, N. J.
Alfred C. Cotton, M. D., Albany, N. Y.
Theodore J. Elterich, M. D., Pittsburg, Pa.
LeGrand Kerr, M. D., Brooklyn, N. Y.
Walter G. Murphy, M. D., Hartford, Conn.
Meyer L. Rhein, M. D., D. D. S.. New York, N. Y.
J. Ross Snyder, M. D., Birmingham, Ala.
Henry Enos Tuley, M. D., Louisville, Ky.
Charlton Wallace, M. D., New York, N. Y.
William W. Butterworth, M. D., New Orleans, La.
Thos. D. Coleman, M. D., Augusta, Ga.
Charles Douglas, M. D., Detroit, Mich.
William C. Hollopeter, M. D., Philadelphia, Pa.
H. M. McClanahan, M. D., Omaha, Neb.
John B. Rae, M. D., New York, N. Y.
Henry L. K. Shaw, M. D., Albany, N. Y.
Parker Syms, M. D., New York, N. Y.
James W. Van Derslice, M. D., Chicago, Ill.
George M. Wells, M. D., Portland, Ore.

EDITORIAL.

A NEW METHOD OF DIAGNOSIS AND TREATMENT OF FISTULOUS TRACTS, TUBERCULOUS SINUSES AND ABSCESS CAVITIES.

A very valuable addition to our methods of diagnosis and treatment of fistulous tracts and particularly of tuberculous sinuses and abscess cavities is advocated by E. G. Beck of Chicago, (Illinois Medical Journal, April, 1908). The large number of children who for years suffer from these conditions in spite of the best medical and surgical care makes such addition to our diagnostic and therapeutic resources of great practical value. This new method enables one to see all sinuses and their full extent even before operation and according to its advocates makes an operation, in many instances unnecessary. The method of diagnosis consists in filling the sinuses or abscess cavities with a bismuth vaseline paste and then taking a radiograph. Such a radiograph will clearly show every fistula with all its ramifications. This is a more reliable method of diagnosis than any used heretofore and is at the same time a curative measure. According to the author it is applicable to all fistulæ or abscess cavities except intracranial sinuses or biliary fistulæ. The list of cases treated include fistulæ resulting from spondylitis and psoas abscess, tubercular hip joint, tubercular knee joint, tubercular pelvis, tubercular ulna, osteomyelitis of femur, fistulæ following resection of tubercular kidney, rectal fistulæ, abscess of the lung and abdominal fistulæ. The paste used for diagnostic purposes contains bismuth and vaseline, while that used for curative purposes contains in addition white wax and paraffin. The latter when injected in liquid state solidifies in the fistulæ and acts as a framework for new connective tissue. What makes this treatment of great value is the fact that even the remotest ramifications of sinuses are reached by the paste and are thus treated simultaneously. The method of injection is very simple and is practically painless. It requires no anaesthesis and can be repeated as often as is necessary. Its simplicity and freedom from danger makes it a method of great practical value. Judging from the results obtained by Beck, it is reasonable to believe that his method added to those heretofore used, such as fresh air, Bier's hyperaemic and vaccine therapy, will prove of inestimable value in the treatment of conditions which have so long baffled the skill of surgeons. It is a method worthy of our careful attention.

ABSTRACTS

Technic of Hare-lip and Cleft Palate Operations.— (The Jour. of Indiana State Med. Ass'n., Aug., 1908) Joseph Rilus Eastman says that most writers on this subject state that it is not wise to operate for this condition while the patient is under three years of age and that infants do not bear operations well, there seems to be no good grounds for these statements as Broply of Chicago believes that there is less nervous shock after an operation on a child of a few weeks of age than when the baby is older, that the bones are softer and that the muscles of the palate develop instead of atrophy. Lane of London, foremost in this field of surgery is of the opinion that the best time for the repair of this unfortunate condition is the day after birth or as soon after as possible, as the tissues are in the best state for early repair, the resisting power has not been reduced and there is no indigestion from improper feeding. In Lane's operations during the first week the infant rarely cries, is almost never sick after the anesthetic and takes the food an hour or so after the operation.

Milk Epidemic in Christiania.–In the Lancet of June 13 is described an extraordinary milk epidemic in Christiania, which was reported by Dr. Sömme. It began during the first fortnight in March. The attack in almost every case began with a sore throat. It was traced to the milk supply of one dairy and thence to a cow with a diseased udder. The cow was slaughtered and an abscess was found in the udder containing streptococci identical with streptococci obtained from patients suffering from the disease. The streptococci were in chains, each link of which was divided longitudinally. They stained with Gram's method. Stained specimens suggested the presence of a capsule. On a serum culture the growth showed a thin moist film, almost watery, only a little adhering to a thread drawn of it. It did not grow on ordinary agar—on agar made alkaline the growth was slight. Ready growth took place in ordinary bouillon, ascitic and serum bouillon, and on plates of serum bouillon (Löffler's) with dextrose or lævulose added. Mice died in from 12 to 24 hours after intraperitoneal injections of minute quantities of the culture and cultures were easily obtained from the blood. It was much less virulent for rabbits.

The number of cases of the epidemic notified was 548, but as notification was voluntary probably the number was considerably higher. An interesting feature was the high proportion of adults affected, the ratio of adults to children being about 3 to 1. The symptoms were as follows. There was a temperature 40°C. or more, with sore throat. The surface of the tonsils, pharynx, and downwards towards the larynx was glistening red; in other cases the redness was confined to punctuate areas, and in yet others there was a diphtheria-like membrane which was easily removed. In the majority of cases the appearance of the throat was scarlatinal rather than diphtheritic. Swelling of the glands extended from the angle of the jaw downwards along the sterno-mastoid to the clavicle. In some cases the swelling was slight but the glands were excessively painful on pressure, and this condition sometimes lasted for a long time. Often the temperature fell by crisis after 3 days, then a relapse would occur followed by another crisis, febrile and non-febrile phases alternating for many weeks.

Complications, chiefly of a pyæmic character, were numerous; thus angina phlegmonosa occurred frequently; in one case a number of abscesses occurred on both sides of the throat accompanied by copious hæmorrhages from the nose and mouth. The odour of the pus was very offensive. One patient was almost choked by a purulent uvula of the size of a man's thumb. Further complication were rhinopharyngitis, laryngitis, otitis media, ulcers of the tonsils and palate, empyema of the antrum of Highmore, infection of the accessory cavities of the nose, glossitis of such virulence that the swollen organ protruded from the mouth, erysipelas, in one case dacyro-cystitis, stomatitis, œsophagitis with dysphagia, and albuminuria. Other complications were pyarthrosis, acute rheumatic fever, synovitis, bronchitis, empyema, pleurisy, pericarditis, hæmorrhagic nephritis, phlegmasia alba dolens cruris, paresis of the left hamstring muscles, and erythema of both legs two weeks after infection. Gastro-enteritis and diarrhœa were apparently not common.

The following are examples of fatal cases. A woman, aged 74, had fever, vomiting, pain, and effusion in the left knee-joint and right carpus. Death took place a fortnight after infection. Characteristic streptococci were found in pus from the knee-joint. There were parenchymatous degeneration of the liver and kidneys and fatty infiltration and dilatation of the heart. A male child, aged 16 months had diarrhœa, vomiting, fever lasting from 4 to 5 days, and empyema. Death ensued on the eleventh day. A woman, aged 47, had general glandular swelling. She was convalescent after the third week; then ensued sudden onset of pain in the muscles, principally those of the lower extremities, and pain in both knees, wrists, and in the temporomaxillary joint; the temperature gradually rose to 43°C., accompanied by dyspnœa and œdema of the lungs. Death occurred a week after the onset of the relapse. Post-mortem there were ecchymoses on the surface of the heart but none on the lungs. The spleen was soft and swollen, with well-defined markings. Serous exudate was present in the knee-joint. A somewhat similar epidemic involving 15 patients was described in the Lancet of June 12, 1897, p. 1605.—The Medical Review, Sept., 1908.

A Study of One Hundred and Thirty-Six Cases of Diarrhoea Occurring on the Boston Floating Hospital during the Summer of 1907.—(The Boston Med. and Surg. Jour., September, 1908)—Lucas reports 136 cases of diarrhœa, of which eighty-four were infectious diarrhœa and sixty-three were intestinal indigestion. The majority of these cases, on admission to the hospital, had the typical movements of intestinal infection; small, watery green, or yellow, consisting mainly of mucus, frequently with curds. Of all these cases, only twenty-four had blood in their movements while on board, so that of eighty-four cases of the infectious type only twenty-two, or twenty-six per cent., had bloody movements. Initial high temperature was a noticeable feature in these severe cases only by its absence, low or subnormal temperature being more often the rule. Vomiting was a factor of enough moment in 119 cases to require careful attention. There were several distinct types with which the author became perfectly familiar before the season was over: (1) The utterly hopeless cases with severe toxæmia, presenting the picture of "coma vigil," with eyes half open, lustreless, and with a proneness to develop corneal ulcers. (2) The toxic type with or without frequent stools, and very often the infants in this class had no movements without irrigations or only one to three a day, yet they were certainly toxic. It was often noted that the toxicity lessened with the frequency of the stools, thus showing that the number of movements is not always a good criterion from which to judge the severity of the disease. (3) Children between one and two years, active, and in perpetual motion, until completely overwhelmed with toxines, were very trying to treat. (4) The patients with frequent stools that did not appear very sick or toxic, but often dragged on to become numbered with the obstinate chronic cases. The initial cleanser in most cases was castor oil in liberal amounts; one and one half to three drachms for children under one year. Calomel was given only when oil could not be tolerated, and in these cases it was rarely retained. That high irrigations are of value there can be no question, but that too much weight is attached to frequent colon irrigations, the author is convinced. Of far greater value where there is pronounced vomiting, is the practice of lavage. Of the 119 vomiters, forty-six had repeated stomach washing, frequently three or four times a day. A half hour before feeding was attempted, the stomach was given a thorough washing. Lucas concludes that the best of our present methods of treatment of these cases is starvation, carefully watched, followed by any one of the weak mixtures, low in fat. The guide to starting milk in any form is the general picture the child presents rather than the temperature or any one symptom. Saline infusions are one of the most valuable aids in carrying out the starvation treatment and supplying the liquid quotient. The benefit of colon irrigation is overestimated, though useful in moderation; once in twenty-four hours being sufficient. The lavage is a very important factor when the infection has reached or attacked the stomach. Stimulation is of little value in extreme cases.—Med. Record, Sept 5, 1908.

A Decrease in New York's Infant Mortality.— The Report of the Conference for the Summer Care of Babies, recently submitted by Dr. Walter Bensel, chairman of the conference, shows the most encouraging results in the methods employed this year in the work of caring for infants during the summer months. In the thirteen weeks since the work was begun there were 2,868 deaths of children under one year of age and 3,404 under five years of age, as compared with 3,020 and 3,704, respectively, in 1907. The largest number of nurses employed was eighty-three, and of inspectors, twenty. All told 26,075 mothers were interviewed and instructed in their homes; 8,747 revisits were made; 4,926 instructions were given to mothers on piers; 318 lectures were given in ninety-two schools; 1,188 instructions were given to mothers attending 318 school lectures, for which an attendance of 10,878 is recorded; sick babies received 1,372 visits at their homes; 1,071 treatments were given sick babies on piers, while 361 treatments were given to sick babies brought to school lectures.

Fever in Children.— (Lancet, Sept. 12 1908).—Cantley divides the cases of anomalous fever in children into two groups. The first and more numerous group includes all those in which no definite cause is found on examination, but data can be discovered for a probable diagnosis, which is more or less verified by the course of events. The second group is composed of those cases in which the most thorough investigation fails to reveal the cause of the fever. In most cases fever is due to the direct effect upon the nervous system and so on the heat regulating centres, of toxines produced in the tissues of the body, or in the food before or after ingestion, by microorganisms or ferments. Feverish new born babies should be examined most carefully for evidences of sepsis, which may originate almost anywhere in the body. It is very improbable that teething is ever a direct cause of fever, but its complications may be so. Among them may be mentioned the bolting of food, local inflammation of the gums, inflammation of the mucous membrane of the mouth, etc. Many an anomalous temperature is due to inflammation of the throat. In acute follicular amygdalitis, or even in diphtheria, there may be no symptoms referable to the throat. The nasopharynx is a common site of infection. Chronically enlarged and pitted tonsils are a potent source of attacks of fever. In the absence of all other evidence one may have to fall back on the alimentary tract as the possible source of the fever. Carbohydrate fever is a name sometimes given to febrile attacks which are apparently the result of an excess of carbohydrate food and cured by strict limitation of the diet. The fever lasts from one to four days, and may reach 104° F. In some cases there are incessant vomiting and constipation. Any of the infectious fevers in their early stages may give rise to fever of uncertain origin. True influenza is often unrecognized and still more often diagnosticated on insufficient grounds. The abdominal type of influenza is often mistaken for appendicitis. The rheumatic poison may cause fever in children in many ways, myocarditis being a cause that is often overlooked. Pyelitis is a cause of fever that is very difficult of diagnosis. Female infants are especially liable to infection of the urinary tract by the *Bacillus coli.* In the bladder it gives rise to little or no fever, bacilluria, and sometimes mild cystitis. It is when the bacillus infects the pelvis of the kidney, causing pyelitis, that it gives rise to high fever, the cause of which is overlooked, as it is difficult to obtain the urine of female babies for examination. Nervous, excitable children are prone to irregular pyrexia on slight provocation. Undue exertion, chill, and insufficient clothing are sometimes to blame.—N. Y. Med. Jour., Oct. 3, 1908.

The Safety of Morphia in Children.— A. Iesage and M. Cleret (Archives Générales de Medicine, May, p. 273).—In the treatment of laryngeal spasm in infancy a variety of drugs have been used with indifferent success, apparently because their sedative action is insufficient to overcome the spasmodic condition. The writers hesitated to prescribe morphia owing to the doctrine that its use in childhood is dangerous. On examining the data on which this opinion is based, they found that while serious results have been recorded after the administration of opium or its preparations there is no record of such symptoms after the use of morphia alone. It, therefore, seems probable that the bad effects might be due to some of the other alkaloids of opium which are variable in amount and the action of which is imperfectly known, rather than to the morphia, which, when given in an isolated state, is capable of accurate dosage. Beginning with small doses it was noted that morphia was well tolerated by infants as well as older children and that the results as regards laryngeal spasm were entirely satisfactory. In more than half the cases of laryngeal spasm occurring in diphtheria in which intubation seemed to be indicated, injection of morphia rendered this unnecessary, the patient falling asleep and waking in a few hours free from spasm. The writers used a 1 per cent. solution of morphia hydrochlorate giving 1-3 c.c. during the first year, ½ c.c. during the second, 2-3 c.c. in the third year, while above that age 1 c.c. was given. Frequently these doses produced but a short remission of symptoms and had to be increased, but even in infants a second injection (the dose being reduced) may be made with safety should the original quantity prove insufficient.

In diphtheria the writers give a single injection of 80 to 100 c.c. of anti-diphtheritic serum and also inject subcutaneously a dose of morphia suited to the age of the child. In early cases with marked inspiratory effort sleep follows and the respiration becomes quiet. After a sleep of 5 or 6 hours the child wakes benefited by the antitoxin and the inspiratory spasm rarely recurs so that intubation is avoided in the majority of cases and recovery is uneventful. In cases of 3 or 4 days duration the result is less successful as the dyspnœa is then rather mechanical than spasmodic, but morphia may be given and intubation practised should it fail to give relief. Even when intubation is necessary the use of morphia may shorten its duration, the tube being removed in 6 hours and a dose of morphia given on its withdrawal. Finally, should spasm recur after removal of the tube an injection of morphia may render reintroduction unnecessary. The writers consider that as intubation has replaced tracheotomy it may be replaced in turn in many cases of uncomplicated diphtheria by the use of morphia and this with perfect safety even in the case of young infants.—The Medical Review, Aug., 1908.

The Exudative Diathesis.— Czerny (Monats. f. Kinderheilk., 1908, vii, 1) finds that in all instances in which children suffer with the exudative diathesis, parents and other relatives are neuropathic or psychopathic; in fact, he says, children of markedly nervous parents are rarely free from this constitutional affection, but there is not necessarily a relation between the degree of nervousness in the parent and the exudative diathesis in the children. Knowledge of this combination is of marked practical importance, as a complete cure can be expected only if the treatment is directed both against the diathesis and the neuropathic tendency. A persistent eczema may be cured by simply removing the child from its family surroundings and placing it where its mental activity can be guided along different grooves; the same is true of many cases of nervous asthma and other nervous affections. Czerny advises against rest cures and medicines, preferring an entire change of the method of living and education.—Am. Jour. Med. Sciences, Oct., 1908.

Dairymaid Spreads an Epidemic.—(Milwaukee Med. Jour., Aug., 1908).—Dr. Braithwaite, the government inspector, in a Home Office report issued today, tells an amazing story of a healthy dairymaid who was really a living enteric germ factory, and caused a perfect epidemic of the disease in the Brentry Inebriate Reformatory, Bristol.

Dr. Braithwaite mentions that one of the things that led him to his discovery was the exactly similar case of a New York cook described in the Daily Mail on April 2 last.

Dr. Braithwaite's report tells the story of the Brentry outbreak thus:

"An inmate caught enteric in September, 1906. The milk was suspected, and elaborate precautions for cleanliness and sterilization were taken in vain. By November twenty-eight persons were attacked, and two died.

"A tea party confirmed the suspicion of milk. A casual visitor among the others took clotted milk. All caught the disease except one man, who did not touch the milk.

"Once again the dairy was overhauled. All rat holes were stopped, and every human precaution was taken, but the outbreak continued.

"Other doctors were called in. The New York cook and other instances of the kind were recalled, and the dairymaid was removed from the dairy on suspicion of being an infected individual, acting as a carrier of enteric germs.

"She had passed through an attack of typhoid six years before, from which she had apparently completely recovered, but a bacteriological examination showed that she was in a highly infective state, intermittent, not regular. The epidemic had started after her admission to kitchen work, and became more virulent after she was confined to dairy work. Since her removal from the dairy no case has occurred."—Daily Mail.

Dr. Braithwaite adds that this discovery will no doubt account for hitherto unexplained outbreaks in other institutions.

Precautions will have to be taken with all persons who have suffered from typhoid.

It is a question whether chronic germ carriers can be rendered non-effective, and their registration seems to be indicated.

This seems quite "remarkable if true," and from the position held by Dr. Braithwaite it is reasonable to suppose that he is a man of scientific attainments and veracity. We know that infective microorganisms live indefinitely in other cavities, notably in the mouth and naso-pharynx; it is, therefore, not unreasonable to suppose that Eberth's bacillus may go on living its cycle and multiply indefinitely in the intestinal mucosa. This being so, it is easy enough to see how a person not overly particular might infect such an elegant culture medium as milk.

This report further emphasizes the fact that there is still a great deal to learn about the tenants of our bodies, and that we should maintain not only an analytical attitude toward these various reports, but a receptive one as well. The fact is further pressed upon us that the presence of pathogenic bacteria alone is not sufficient to produce disease; that there must be a break in the normal defenses before there can be an infection; these defenses residing in the habitat of the organisms, as the mucous membrane, in the blood and in the nervous system. Furthermore, this report emphasizes the fact that "there can be no effect the result of a single cause."

The Behavior of the Cutaneous Tuberculin Reaction during Measles.— G. von Pirquet (Deut. med. Woch., 1908 xxxiv, 1297) has found from the study of a large number of patients with measles, some of which were known to have tuberculosis, that tuberculous children lose their reaction to tuberculin during the measles attack for about a week. One hundred and fifty-nine patients with measles were examined: 50 only during the week following the beginning of the eruption, and all of these were always negative; 36 negative both during and after the week of eruption; 2 negative before, during, and after the week of the eruption; 6 negative before and after the eruption week; 23 negative, examined only after the eruption week; 3 positive, examined only after the eruption week; 25 examined during and after eruption week, first negative and then positive; 6 examined before, during and after, with respectively positive, negative, and positive results; 1 before and during the eruption week, first positive and then negative; 1 during and after the eruption week, first negative and then positive; and 6 with uncertain reactions. This phenomenon von Pirquet believes to be due to a destruction of the tuberculosis antibodies; in corroboration of this he has found that during measles the tuberculous process has spread considerably in every case in which the condition has been known to exist. The disappearance of the reaction does not occur in scarlet fever, diphtheria, epidemic cerebrospinal meningitis, or typhoid fever. In cases in which the tuberculin reaction persists or exists during an eruption resembling measles, von Pirquet is certain that the exanthem is other than measles, thus giving the existence of the tuberculin reaction a value from the standpoint of differential diagnosis.—Am. Jour. Med. Sciences, Oct., 1908.

2 **Hernia of the Ovary in Infants.**—(Edinburgh Med. Jour., Sept., 1908).—Nicoll observes that in a few cases the development of strangulation gives the first indication of the hernia. In other cases the parents give a history of apparent local discomfort on the part of the infant as leading to the discovery of the swelling. In the large majority of instances, as in the case of inguinal hernia in male infants, the parents simply state that they have observed a "lump" or "swelling" in the groin, which "lump" is said to be constant or intermittent in appearance as the ovary happens to be reducible or not. In a number of the cases the infant presents an ill nourished and puny appearance, and is said to be fractious and troublesome. Treatment should in nearly all cases be operative. In the strangulated case operation is imperative. In the case of the irreducible ovary it is in every sense advisable. The wearing of a protective truss in the infant is impracticable. In the case of the reducible ovary operation would appear to be the rational line of treatment. Truss wearing by the young infant is a troublesome and usually ineffective procedure, and the choice of treatment lies between operation and ignoring the hernia. The latter line has this to be said for it, that in certain cases the hernia disappears without having been strangulated, and is not succeeded by enterocele or epiplocele. On the other hand, the operation has a mortality rate purely nominal. The advantages of operative treatment are as follows:—(*a*) Prevention of strangulation; (*b*) prevention of subsequent enterocele; (*c*) relief from the irksomeness of truss wearing; (*d*) improvement of the infant's health (in many cases the change from peevish emaciation to plump health is marked); (*e*) ablation of cysts in the ovary. In over thirty per cent. of the cases the ovary is found to contain cysts—single or multiple. Such cysts are ablated in various ways—excision followed by suture, evisceration with the sharp spoon, or other method.—N. Y. Med. Jour. October 3, 1908.

Skin Gangrene in Scarlet Fever Rheumatism.— (Heubner Berliner Klinische Wochenschrift, July 20, 1908).—This case came in the Kinder Klinik in Berlin, and has the following history: Taken sick Dec. 21, 1904, together with two other members of the same family. A rash appeared on the skin, which was not seen by any physician, but answered to the description of scarlet fever. Two weeks later, when seen by a physician, decided desquamation was present. On January 7th the child again had fever, sore throat and enlargement of the cervical glands, and a few days later swelling and pain in the joints, which was regarded as scarlet fever rheumatism. Surrounding these affected joints was a marked redness of the skin.

On Jan. 17, the skin over the elbow became dark in color and looked gangrenous. The same condition appeared on the back of the hands, consisting of an area the size of a silver dollar. Surrounding these areas was a well-defined line of demarcation. Examination by staining of some of the secretion from the skin revealed no organisms which would be the cause of the condition. These areas gradually sloughed and new granulations took their place, so that after five months the areas are almost entirely filled in and covered by new skin.

The author made very exhaustive research, but was not able to discover the cause of the condition.—St. Paul Med. Jour., Oct., 1908.

Large Doses of Antitoxin in Diphtheria.— Delearde and Minet (Province medicale, 1907, xx, 501) emphasize the importance of large doses of antitoxin, even in mild types of diphtheria on account of the possibility of the occurrence of serious complications and sequels. Their observations prove the harmlessness of large doses, their influence in the management of toxic symptoms, their rapid curative action, and their effect in preventing complications. Their usual initial dose is about 50 c.c., and this amount has never been followed by any serious accident. Further dosage is regulated by the patient's progress, but there need be no hesitation in giving 100 c.c. within twenty-four to thirty-six hours. By the third day the temperature usually reaches normal, the membrane becomes detached and is expectorated, and recovery is rapid. The albuminuria, which is a positive indication for the administration of large doses, quickly disappears, and eruptions due to the injections are rarely seen. Supplementary treatment, consisting of applications to the throat of camphor, 2 parts; menthol, 1 part; lavage of the mouth with 5 per cent. Labarraque's solution; warm baths every morning; and, in the presence of bronchitis, two sinapisms to the chest daily, is advised. Mild expectorants may hasten the elimination of the exudates. Intubation should be done if necessary, and to these patients inhalations of steam impregnated with tar or eucalyptol are given. The proper diet is one which is poor in chloride elements and frequent drinks should be administered. Antipyretic drugs are contraindicated.—Am. Jour. Med. Sciences, Oct., 1908.

A Milk Commission for Indianapolis.— The appointment of a committee by the Indianapolis Medical Society for the purpose of investigating the feasibility of a milk commission in Indianapolis is a step in the right direction.

However, in order that the commmission shall be successful it will be necessary to have the support of the medical profession, the dairymen and the citizens. The most important feature is the cooperation of the dairymen who necessarily will be at a great expense if they furnish certified milk; furthermore, such a commission is not paid for its services and has no legal authority, yet the cause is a good one and the method should be inaugurated in Indianapolis.

We must bear in mind that some dairymen have taken the position that if they certify their milk they desire to know who will certify them.

At a recent meeting of the dairymen which was called by Dr. Eugene Buehler, City Sanitarian, one dealer made the written proposition that he would go to all the necessary expense required to furnish certified milk providing that the Committee from the Indianapolis Medical Society give a bond that he would be recompensed by sufficient patronage.

There is every reason why Indianapolis should have certified milk and while there are many stumbling blocks in the way I predict that they will finally be removed. The inauguration of this method in several large cities has been successful, though it is true that in one city a year passed before any one would furnish certified milk.

It has been intimated that the Board of Health will leave this matter entirely in the hands of the milk commission which I do not believe would be practical; on the contrary, it seems necessary, in order to meet with success, that these two bodies work in unison.—Central States Med. Monitor, Aug., 1908.

Caring for the Mothers of Infants.— The upbringing of young children is a matter which has been arousing an extraordinary amount of interest in all civilized countries during the past few years. Perhaps this has been particularly the case in France and Great Britain, for in both of these lands the birth rate is rapidly and progressively decreasing, while infant mortality is excessively high. Indeed, so far as France is concerned, the birth rate is at so low an ebb that population year by year is gradually becoming less and less, and in the large cities infantile mortality is high. In Great Britain the birth rate as yet considerably exceeds the death rate, but the proportion is continually undergoing considerable alterations and the population does not increase at the rate which was formerly the case. In America the birth rate among native born Americans shows a steady decrease, infantile mortality is high in most of the cities, and if it were not for the fecundity of immigrants and of those of alien stock, and for abundant immigration, this country would soon have to lament a falling off in the population, as indeed it has temporarily at present, owing to the large emigration and decreased immigration during the past year. In France and in Great Britain vigorous efforts are being put forth to check infant mortality. France was the pioneer in this respect, and in Paris and in provincial cities, municipalities and charities have striven in a spirit of emulation to save the lives of young children. Some few years ago a new departure was entered upon by a few Parisian philanthropists. A Madame Coullet was struck by the fact that if expectant and nursing mothers are not well nourished, their offspring must either die prematurely or live, in many instances, diseased in body and mind. Accordingly, Madame Coullet, in 1902, opened a restaurant in one of the poorest quarters of Paris, in which expectant or nursing mothers could procure a satisfactory meal free. The scheme has answered so well that there are now five Coullet restaurants in Paris in which are fed a very large number of women. No questions are asked of an applicant for a meal; it is sufficient that she is an expectant or nursing mother and hungry. Other charitable institutions conducted on somewhat similar lines exist in Paris.

In Great Britain it is only within the past two or three years that any earnest endeavors have been made to cope with the problem of how best to conserve infant life. It is notorious that the inhabitants of the British Isles are in a high degree conservative and hard to move from their old accustomed ways. The question, however, became too serious to be ignored, in fact bade fair to develop into a national menace. Perhaps two-thirds of the British people are dwellers in cities, and urban life is not best calculated to bring forth able and hardy citizens. For infants and young children the conditions in the poorer districts of cities are terrible, and at last it has been brought plainly home to medical men and sanitarians of Great Britain that it is absolutely imperative steps should be taken to save the lives and preserve the health of infants. During the past two years extraordinary activity has been exhibited in that direction in all parts of the country. In many provincial towns, schools for mothers have been inaugurated, and in some towns the example of Madame Coullet in Paris has been closely followed. In London, in one of the large, populous, outlying districts, several restaurants have been established in which expectant and nursing mothers are fed, in which babies are inspected and weighed by a medical man, and advice given in all that concerns the rearing of infants. In two or three other districts similar schemes are in existence, while in one very large populous quarter situated in the heart of the metropolis, a far more ambitious scheme is now in working order. A charitable society working in cooperation with the borough health board has inaugurated what is known as a "School for Mothers." A commodious building has been secured at which takes place the following routine of work: (1) Infant consultations. (2) Dinners for nursing mothers. (3) Educative classes. (4) Provident Maternity Club. (5) Home visiting. (6) Fathers' evening conferences. The chief aim of the society is to combat the ignorance that prevails among women of the working class with regard to the rearing of children, and especially to impress upon them the great advantage of breast feeding. It is recognized that if an expectant or nursing mother cannot nourish herself properly the child is not likely to be robust, so in those cases in which the mother is unable through poverty to procure nourishing food, such food is supplied at a nominal cost. The scheme, since its adoption in various parts of Great Britain, is said to have met with great success, and schools for mothers are multiplying in all directions.—N. Y. Med. Record, Sept. 26, 1908.

Infant Binders.– (British Medical Journal, June 13, 1908) —"Waring calls attention to the dangers of enveloping the infant's body 'in countless bands, swathes and swaddling clothes.' The dangers of constriction and increased intra-abdominal and intrathoracic pressure depend on: 1. The degree of constricting or binding force; 2, the extent of surface covered; 3, the time worn; 4, the health and power of resistance of the infant. He enumerates the following effects and conditions that may result from binder comparison: 1. Discomfort; 2, vomiting; 3, inguinal and umbilical hernia; 4, prolapsus ani; 5, thoracic deformities; 6, thoracic constriction in pulmonary diseases; 7, interference with cerebral circulation; 8, a contributory factor to the danger of death by overlying."—New England Med. Monthly.

Rennet Coagulation in the Stomach of Nursing Infants.— —The question whether the cheese clots forming in the stomachs of nursing animals and infants are formed by rennin or hydrochloric acid has been studied and solved by A. Kreidl and A.

Neumann (Zentralbl. f. Physiol., 1908, xxii, 133) by means of the ultramicroscope. Casein clots produced by the action of acids could be seen by the ultramicroscope to return to their original fine emulsion before dissolving, when sodium hydrate was added; the clots produced through coagulation with rennin were dissolved by the alkali without returning to this stage. Milk clots from the stomach of nursing animals, as well as clots from the stomach of an infant fed with cow's milk, were dissolved directly by the rennin, thus showing that in all probability the milk in the nursing infant's stomach is clotted by the rennin and not the hydrochloric acid. That the same is true of human milk is more than probable, as the infant's stomach contains active rennin, and is acid in reaction, and it has been shown in vitro that human milk is coagulated by rennin.—Am. Jour. Med. Sciences, Sept., 1908.

Pure Milk for Babies in Indianapolis.— A fund has been started in Indianapolis by the Children's Aid Association for furnishing pure milk to the needy bottle-fed babies during the summer months. This has been done only after a careful investigation proving that the rate of infant mortality in Indianapolis is higher than it should be and the standard of milk available too low.

According to the plan proposed, distributing stations in charge of trained nurses and supervised by competent physicians will be established in as many needy districts as the commission can afford. The milk distributed will be the purest available, scientifically prepared according to the needs of the child, and delivered to the station in iced sterile bottles. They are to be sold at a nominal price or given to those found unable to pay for them.

If any infants under a physician's care, in the districts announced are not supplied with milk of a satisfactory quality, the station will be glad to cooperate by supplying milk and the services of a visiting nurse.

Stations are now open at 1753 Yandes, South, East, Norwood and South West streets in Indianapolis.—Indiana Med. Jour., Sept., 1908.

For the Suppression of Flies.— The Board of Health of New York City has been asked by the chairman of the water pollution committee, in furtherance of the campaign of the Merchants' Association against the house fly, to distribute among householders, hotel and restaurant proprietors, etc., cards on which appear the following rules and comments:

Keep the flies away from the sick, especially those ill with contagious diseases. Kill every fly that strays into the sick-room. His body is covered with disease germs.

Do not allow decaying material of any sort to accumulate on or near your premises.

All refuse which tends in any way to fermentation, such as bedding, straw, paper waste and vegetable matter should be disposed of or covered with lime or kerosene oil.

Keep all receptacles for garbage carefully covered and the cans cleaned or sprinkled with lime or oil.

Keep all stable manure in vault or pit screened or sprinkled with lime, kerosene or other cheap preparation.

See that your sewerage system is in good order; that it does not leak and is up to date and not exposed to flies.

Pour kerosene into the drains.

Cover food after a meal; burn or bury table refuse.

Screen all food exposed for sale.

Screen all windows and doors, especially the kitchen and dining room.

Don't forget that if you see flies their breeding place is near-by filth. It may be behind the door, under the table or in the cuspidor. If there is no dirt and filth there will be no flies.

If there is a nuisance in the neighborhood write at once to the Health Department.

It is confidently believed that this method of following up the impression made last year, not only on the people of New York, but on those of all sections of the country, will result in a great diminution of the number of deaths from the hot weather diseases now known to be transmitted by flies.

Jahrbuch fur Kinderheilkunde, Berlin, August, 1908, Daily Variations in Temperature in Infants.— Gofferjé has made a study of the temperature in healthy and sick infants. It keeps on a high level plane from 6 a. m. to 6 p. m., with a corresponding low level plane at night, from 10 p. m. to 4 a. m. To be truly instructive, the temperature should be recorded uniformly at 2 and 10 a. m. and at 6 p. m. The difference between the day and night plateaux was more marked in the older children but no difference could be detected between breast children and others thriving on artificial feeding. The temperature in the axilla is that of the muscles, and is an index of the innervations of the muscles. From the record of the temperature taken in the axilla it is easy to tell just when the infant awoke, when he lay quietly, and when he cried. As the child wakes and grows lively the temperature rises, reaching its height about 10 a. m. The curve drops a little at each nap, and rises above the level at each crying spell. Febrile conditions affect the daily variations in three typical ways. The most frequent type is that in which the night reduction does not occur at all or occurs tardily, and there are occasional peaks rising above the normal diurnal plane. This is the type in dyspeptic disturbances; in severe alimentary intoxication this type is most pronounced. The peaks become sharper and more frequent, but there is no difference between the day and night levels, merely the irregular zigzag of the temperature, amounting to actual delirium of the temperature in the severest form of intestinal catarrh. This type is also observed in serum diseases. Curves are given from various affections of this and the other types, all confirming the diagnostic importance of the daily variations in the temperature of infants. In one case, for example, the projecting peaks and the delay in the night decline were observed the second day after a prophylactic injection of diphtheria antitoxin. Nothing else indicated anything wrong; the child slept quietly, but in a day or two an exanthem developed, the peaks rose higher, and the temperature did not decline in the least at night. The onset of the serum sickness in this case was revealed early by the temperature curve long before it could be otherwise detected. The second type of changes in the curve in febrile conditions is that in which the temperature line runs night and day horizontal along the day level, or moves in waves with no connection with the normal daily variations. This type includes remittent and continuous fevers, and this change from the normal type may occur without the temperature surpassing the physiological limits. When the temperature curve runs in a horizontal line at the level of the day plane this indicates the onset of a febrile condition. In his experience this was always the premonitor of an infectious affection. He call it *febris continua sine elevatione*. In the beginning of this research the attendants thought something was wrong with the thermometer when the infant was found sleeping quietly at night but with temperature still at the day level, although other conditions seemed to be entirely normal. In a day or so symptoms developed in every such case showing that the absence of the usual night drop was the result of the incipient morbid process. The absence of the nocturnal decline is one element of the febrile syndrome; it seems to be the first phase of continuous fever. In estimating the tuberculin reaction, this lack of the nocturnal drop in the temperature must be regarded as the equivalent of fever. The third type of disturbance in the daily variation of temperature is quite rare. The daily variations persist, but they are very much exaggerated both upward and downward. It must be borne in mind, he adds, that the glandular organs in infants represent about 6.4 per cent. of the total weight, against 3.8 per cent. in adults, while the muscles represeit only 25 per cent., against 4.3 per cent. in adults.—Jour. A. M. A., Sept. 26, 1908.

BOOK REVIEWS.

Golden Rules of Dietetrics.—The General Principles and Empiric Knowledge of Human Nutrition; Analytic Tables of Foodstuffs; Diet Lists and Rules for Infant Feeding and for Feeding in Various Diseases. By A. L. Benedic , A. M., M. D., Buffalo, N. Y. St. Louis: C. V. Mosby. Price $3.00.

This little volume has a most unfortunate title for a scientific work for it is indeed such, as it is a most careful and comprehensive text-book on this important subject. The author says "Bearing in mind the needs of the active practitioner of medicine the writer has endeavored to avoid purely scholastic scientific research which cannot be adapted to practical ends, and, on the other hand, the short-sighted so-called 'practical' scientific basis which alone enables a grasp of their true significance and a proper adjustment to individual requirements."

The volume treats of physiologic chemistry, daily requirements of the human body, standard diet in health, waste of foods, etc., and an excellent diet list and suggestions for the various diseased conditions. The chapter devoted to infant feeding is quite conventional. We feel sure this work will be found of no little use to the general practitioner.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application.

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

PUBLISHER'S NOTICE.

"THE POLICY OF HONESTY."

When we began business, we determined to treat everyone alike; to have one price for all; to take back, immediately and without question, anything that failed to prove as represented. When a physician wrote us that some preparation had not produced the result that our salesman had told him that it would produce, we immediately requested that physician to return the preparation at our expense and, upon its receipt, we immediately returned to the purchaser the full amount paid by him for the preparation. This was only honest; but it was a very good policy. We began in the cellar of an Eighth Avenue Drug Store. Then we moved to a small loft in John Street. Then we took another loft, and another, and another. And then we bought ninety acres of ground at Orangeburg, New York, and built a large laboratory and cottages. We have never borrowed, owed or imitated anything. We know that "Honesty is the Best Policy," and that to this "policy" we owe a large part of our rapid increase in business. But we could not have succeeded under this policy unless our preparations had proved their superiority over other remedies. Physicians would not have continued to prescribe Pa-pay-ans Bell unless Pa-pay-ans Bell had shown them better results than did other anti-dyspeptics. Doctors, to live and succeed, must retain their patients, and obtain more patients; and to retain their patients and to get more patients, thep must prescribe remedies that produce satisfactory results. The only sure test of ability is success. The most successful men both in reputation and financially, are the largest prescribers of Pa-pay-ans Bell. This statement we will prove to every physician who asks. Two men, whose standing is as high as that of any two men in this country, have been prescribing Pa-pay-ans Bell, in indigestion, for nearly ten years. Over seventy thousand physicians, by our records are now either prescribing or dispensing Pa-pay-ans Bell, and its annual sale exceeds three hundred million tablets. We are now in a position to prove our claim, at our own expense—that Pa-pay-ans Bell is the best anti-dyspeptic in use. We will prove it by delivering, gratis, to any physician who has not used Pa-pay-ans Bell,—two hundred—five hundred—or a thousand of these tablets if desired. Enough to convince any physician, by what he sees it do, that Pa-pay-ans Bell is the best anti-dyspeptic at his command. Enough to prove its superiority over any and all other anti-dyspeptics in use. We have accumulated a large reserve fund for this purpose and will upon request, immediately and without any expense or obligation on the part of the phyician, deliver enough Pa-pay-ans Bell to satisfy any physician, by what he

PEDIATRICS

Vol. XX NOVEMBER, 1908 No. 11

ORIGINAL ARTICLES

A REPORT OF FOUR CASES OF TYPHOID FEVER IN INFANTS.

By John Lovett Morse, A. M., M. D., Boston.

ASSISTANT PROFESSOR OF PEDIATRICS, HARVARD MEDICAL SCHOOL; ASSOCIATE VISITING PHYSICIAN AT THE CHILDREN'S HOSPITAL; ASSISTANT PHYSICIAN AT THE INFANTS' HOSPITAL; VISITING PHYSICIAN AT THE FLOATING HOSPITAL, BOSTON.

It seemed worth while to report these cases because of the comparative infrequency of typhoid fever in infancy and especially because of the rarity of the disease at this age in Boston. These four babies were all admitted to the writer's service at the Infants' Hospital within a month. There have been but two other cases of this disease in the hospital during the last twenty years. It is to be noted that they occurred in connection with a sharp milk-borne epidemic. In but two, however, could direct exposure to the infected milk be made out.

3216. Female, 18 months old, was being fed on a general diet, including milk. No connection with the milk supply from

Jamaica Plain could be made out. Her mother, however, had gone to the City Hospital with typhoid fever the day before.

The history was rather indefinite. Four weeks before entrance she caught cold and for a time had a very severe cough which later diminished. During these four weeks her appetite had been very poor. She had vomited a little at the beginning of the attack. Her bowels had been somewhat constipated. She had slept poorly. She was admitted to the Infants' Hospital May 11, 1908.

Physical Examination. She was well developed and nourished, but flabby. Her color was good and the skin in good condition. She was perfectly intelligent. The throat was normal. There were 16 teeth. Her tongue was moist and but slightly coated. The pupils were equal and reacted to light. The anterior fontanelle was closed. There was a very slight rosary. The heart and lungs showed nothing abnormal. The level of the abdomen was that of the thorax. It was negative in every way. The liver was palpable 2 cm. below the costal border. The spleen was just palpable. There were a few rose spots on the abdomen and back. The extremities were normal. The knee-jerks were present but somewhat diminished. There was no spasm or paralysis of the extremities and Kernig's sign was absent. The cervical lymph nodes were slightly enlarged, the others not.

The urine was pale, cloudy, slightly acid, 1015, and contained no albumin.

The blood taken on the day of entrance gave a positive Widal reaction.

The temperature was normal at entrance and continued so. The child took its food well and did not vomit. It was somewhat constipated, the movements, however, being normal in character. The spots on the abdomen quickly disappeared and the spleen was not palpable after the 13th.

This case was evidently one of infantile typhoid in which, as is so common in infancy, the pulmonary symptoms were more marked than the abdominal. It is fair to suppose that the mother caught the disease from the baby rather than the baby from the mother.

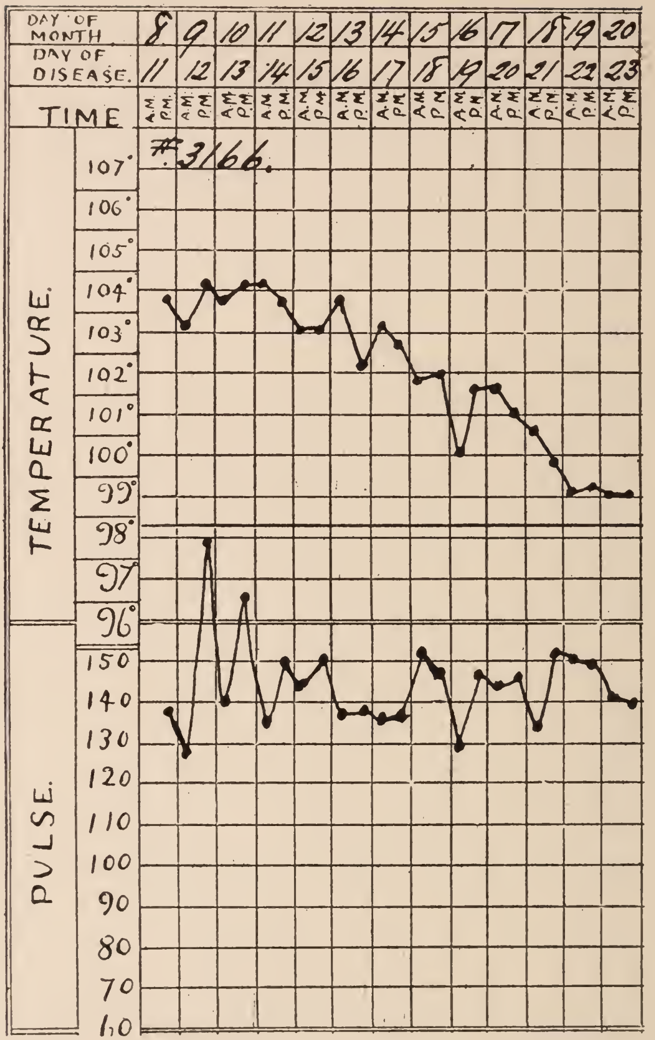
3166. Male, 11 months old, living in the West End, was fed on milk obtained at a store in the neighborhood. He had not taken milk from any other source and this milk was not obtained from the dealers in Jamaica Plain. He also took water and a little of everything from the table. He was taken rather suddenly sick March 28th with vomiting. Fever was not noticed until March 30th. His appetite was poor. He did not vomit after the first day. The bowels moved two or three times daily, the movements being green and full of mucus. He continued to be feverish and was drowsy most of the time. One ear had been opened at the Eye and Ear Infirmary without relief of the symptoms. He was admitted to the Infants' Hospital, April 8th.

Physical Examination. He was well developed and nourished and of good color. The skin was in good condition. The fontanelle was 1 cm. in diameter and somewhat depressed. There was no rigidity of the head or neck. He was conscious but drowsy. The pupils were equal and reacted to light. He had 5 teeth. The mouth and tongue were rather dry. The tongue was not coated. The throat was normal. The general appearance was that of pneumonia. There was a moderate rosary. The heart was normal. The lungs were normal except for a few fine moist rales at the bases behind. The level of the abdomen was that of the thorax. There was no rigidity or tenderness. The liver was palpable 2 cm. below the costal border. The spleen was palpable 2 cm. below the costal border. There was a fine macular rash on the abdomen, not a typical roseola. The extremeties were normal. The knee-jerks were equal and rather feeble. There was no spasm or paralysis of the extremities. Kernig's sign was absent. There was a profuse purulent discharge from the left ear. The right drum was normal. The temperature was 103.8° F., the pulse 138, the respiration 36.

The urine was high colored, acid and contained no albumin.

The blood showed Hb. 80%, white corpuscles 11,000.

The blood taken at entrance gave a positive Widal reaction.

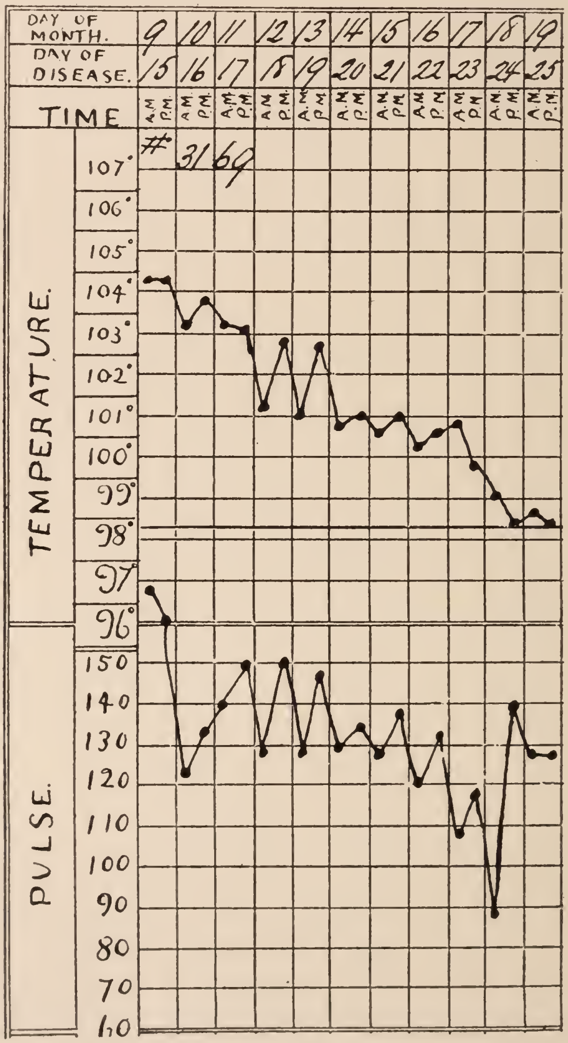


The temperature continued elevated until the 19th, giving a duration of fever of 21 days. The temperature fell by slow lysis with none of the remissions and intermissions seen so commonly in typhoid in later life. The pulse rate was no slower than would be expected from the temperature. The baby continued apathetic as long as the temperature lasted but after that he was rather irritable. At no time was he delirious or excited.

The tongue was never coated, and after the first two days in the hospital was moist. The abdomen was at times a little full but never tense or tender. The rose-spots were very numerous for several days after entrance. The spleen on April 11th extended 3 cm. below the costal border and was 5 cm. in diameter; it was not palpable after the temperature reached normal. There were many fine and medium moist rales in both backs from April 10th to April 16th, so many, in fact, that if the previous history had not been known they would probably have directed attention to the lungs as the seat of the trouble. He took his food reasonably well and vomited occasionally during the first week after entrance to the hospital. The movements were almost always normal in character, and, except on two days, there was a tendency to constipation.

3169. Female, 16 months, living in Jamaica Plain, was fed with the infected milk, as was her brother who also contracted the disease. Her appetite became poor and she seemed out of sorts about March 26th. She soon became drowsy and feverish. The temperature was not taken regularly until April 5th, after which it ranged beween 103° F. and 105° F. There had been no vomiting until April 8th, the day before admission. The tendency had been to constipation but on two occasions, as the result of cathartics, the bowels had moved very freely. Typhoid fever not having been suspected, the baby had been fed on water or barley water and sugar for four or five days before entrance. Questionable rose spots had been seen 3 days before. She was admitted to the Infants' Hospital, April 9th.

Physical Examination. She was well developed and nourished. The color was good. The skin was in good condition. The anterior fontanelle was 1 cm. in diameter and level. There was no rigidity of the head or neck. She had 8 teeth. The tongue was clean and moist. The throat was normal. The ears were normal. The pupils were equal and reacted to light. She was stupid but perfectly intelligent when aroused. The heart and lungs showed nothing abnormal. The level of the abdomen was that of the thorax; it was not tense or tender. There were a few rose spots on the abdomen and chest. The liver was palpable 3 cm. below the costal border. The spleen was not palpable. The extremities were normal. The knee-jerks were equal and diminished. There was no spasm or paralysis of the extremities.



Urine: pale, acid, 1015, no albumin.
Blood: Hb. 75%. White corpuscles 8,200.

The blood taken on the day of entrance gave a positive Widal reaction.

The temperature fell by a gradual lysis with no remissions or intermissions and reached normal on April 18th, giving an apparent course of 24 days. The pulse and respiration were consistent with the temperature, the pulse not being any slower than would be expected from the temperature. She took her food willingly, did not vomit and had a tendency to constipation, the movements being normal in character. She was rather apathetic until April 14th when she began to be irritable. She was never delirious. The tongue became somewhat dry and reddened, as did the throat, but was moist and clean several days before the temperature was normal. The abdomen was at times a little distended and tense but never tender. Rose spots became more numerous a few days after entrance. The spleen was never palpable. A few rales were heard in both backs April 11th.

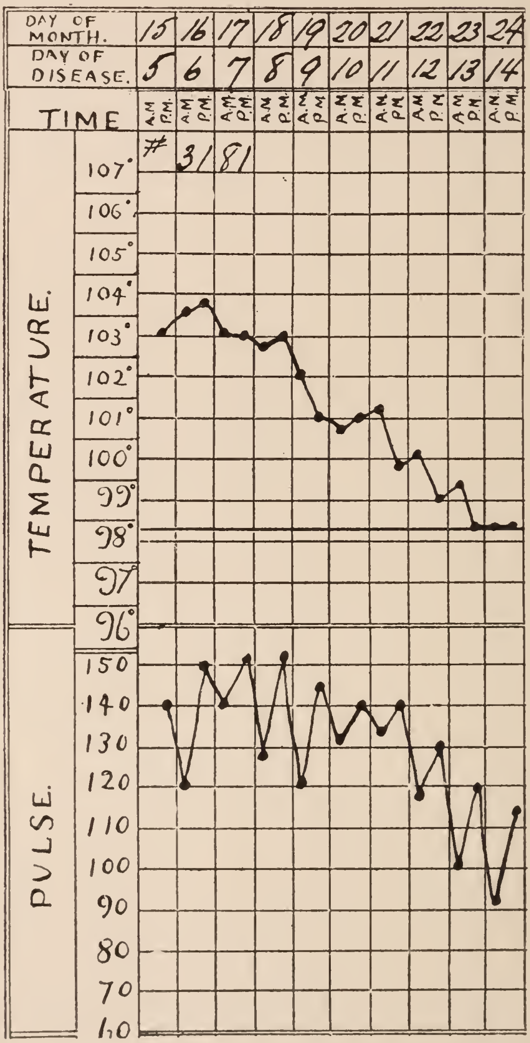
The absence of remissions and intermissions in the fever is also noticeable in this case. There was bronchitis in this case also, but much less marked than in the other cases.

3181. Female, 19 months old, living in Jamaica Plain, took the infected milk and developed typhoid as did one of her two brothers and her mother. She became very feverish and refused food April 11th. She vomited April 13th. The movements from the bowels were normal until April 14th when she had 6 or 7 brownish movements. She was coughing a little when she was admitted to the Infants' Hospital, April 15th.

Physical Examination. She was well developed and nourished. Her color was good. The skin was in good condition. The fontanelle was not quite closed. The tongue was moist and moderately coated. The throat was normal. There were 16 teeth. She was rather drowsy but perfectly clear mentally. The heart and lungs showed nothing abnormal. The abdomen was somewhat distended and tympanitic. There were numerous rose spots. There was no gurgling. The liver and spleen were not palpable. The extremities were normal. The knee-jerks were equal and rather feeble. There was no spasm or paralysis of the extremities and no Kernig's sign.

Blood: Hb. 80%. White corpuscles 7,400.

The blood taken the day of admission gave a positive Widal reaction.



The temperature dropped by lysis without marked remissions, reaching normal April 23rd, the duration of the fever thus being 13 days. The pulse was not unduly slow. She was always perfectly comfortable, perhaps a little quiet, and had no nervous symptoms. She took her food well, did not vomit and most of the time had one or two normal movements daily, although occasionally she had 4 or 5 rather loose movements. The character of the movements was usually nearly normal. The tongue was clean 2 days before the temperature reached normal. The spleen was just palpable the second day after entrance and continued palpable until two days before the temperature reached normal. It never reached more than 1 cm. below the costal border, however. The rose spots were very numerous and lasted until the fall of the temperature. The distension of the abdomen ceased the day after entrance. The lungs were always clear.

The course of the disease in these patients corresponds to that usual at this age. The duration of the fever was comparatively short; the temperature fell by a gradual lysis without marked remissions or intermissions; and signs in the lungs were found more commonly and were more marked than is usual in later life. There were no marked nervous symptoms, but the infants were drowsy and apathetic during the febrile period. The tongue was never very dry or much coated. The type of the disease was rather milder than is usual at this age, however, the mortality in infancy being, as a rule, comparatively high.

No one who had the disease, typhoid, in his mind could have missed the diagnosis in these cases, although he might possibly have been misled for a time in two or three of them by the prominence of the pulmonary signs, as rose spots were present in all who were seen at the height of the disease while the spleen was palpable in three. The course and symptomatology of the disease in these patients confirm the writer's opinion that typhoid fever is as easily recognizable in infancy as in later life and that it really is uncommon at this age and not apparently so because it is overlooked on account of an unusual symptomatology. The hypoleucocytosis characteristic of typhoid was present in these cases and is evidently of great importance in diagnosis at this age as well as later. The Widal test was positive in all at admission, on the 5th, 11th, and 15th days and at the beginning of convalescence, respectively. With one exception, however, the babies entered the hospital so late in the disease that they show nothing as to whether the reaction appears earlier in infancy than in later life, as is supposed, or not. The relatively slow pulse rate in comparison with the height of the temperature, which is of so much importance in the differential diagnosis of this disease, was not found in these cases. A rapid pulse probably does not count as much against typhoid at this age, therefore, as in later life.

The Treatment of Webbed Fingers.—(Med. Review, Oct., 1908), Dr. Alex. MacLennan. Various operations have been devised to separate web fingers. The writer prefers a modification of Zeller's. A Y-shaped incision is made dorsally, and carried round to the palmar surface as far as the heads of the metacarpal bones. The stem of the Y separates the fingers, giving to each that which rightly belongs to it. The separation extends to the knuckles, the dorsal angular flap being reflected meantime out of the way. In most cases it will then be found that the edges of the skin are incapable of approximation, so the thickness of the fingers has to be reduced. This is done by dissecting away the subcutaneous fatty tissue which forms the floor of the newly-made wound. The edges of the skin are undercut. The digital vessels are usually removed, and in some cases the nerves also. The point of the angular flap is then stitched to the palmar end of the anterior incision. The rest of the wound is closed by uniting the dorsal and palmar margins. In doing this, means must be taken to prevent little processes of fat from protruding between the cut surfaces, as these delay union and leave the function of retaining the edges in apposition solely to the stitches for too long a period.

After stitching is completed, the fingers are usually so seriously constricted at various parts that they are more or less anæmic. Little incisions are therefore made through the constrictions, and the benefit of such becomes quickly manifest in the return of the pink color to the fingers. A final dressing must not be put on till the circulation is restored. As the dressing cannot be tightly bandaged on, it has a tendency to be thrown off, so adhesive strapping is applied on either side to fix it to the arm higher up. When more than two fingers are webbed, an interval must be allowed between the operations for separating each pair.

PERCENTAGE COMPOSITION AND CALORIC VALUES OF INFANTS FOOD MIXTURES.

By Langley Porter, M. D., M. R. C. S., England.

PROFESSOR OF PEDIATRICS IN THE SAN FRANCISCO POLYCLINIC; INSTRUCTOR IN CHILDREN'S DISEASES AT COOPER MEDICAL COLLEGE, SAN FRANCISCO.

There has been a tendency of late to decry the advantages of the percentage feeding method. Almost invariably this attempt has been accompanied by a laudation of the caloric method of feeding, and by the claim that only through the use of this system will we arrive at perfection in feeding babies. That the criticisms of percentage feeding are in many instances justified, is not evidence that the method is wrong, but it does show that the system is not successfully applied in every case. The chief valid criticism made by the partisans of the Caloric Method, is that most children, fed after the American manner, are given too much food, especially too much fat. This is unquestionably true; and while to attribute all of the ills of infancy to this fault is an exaggeration, doubtless, very many of the babies we see in clinics and in practice are suffering from nothing else than over-feeding.

But however scientific it may be to sum up the child's daily food needs and supplies in terms of caloric units, it is obvious that the mere presentation of sufficient calories, unless they be perfectly adapted to digestion, will not meet the requirements of the infant. A mixture of meat, bread and butter can be arranged to contain a proper proportion of heat units for the needs of the infant; but no physician would think for a moment of presenting such a food to a nursling. The percentage method is one-sided and takes cognizance only of digestive capacity, but it is based on world-old experience with mother's milk, the food that is optimum to the infant's digestive capacity. An experience of many years in this country has shown its worth and it is too valuable an aid to the physician to be lightly abandoned. It has suffered because of the mathematical enthusiasm of some of its devotees. As a matter of fact there is absolutely no need for any complexity or mystery in following out its simple rules.

Some years ago the writer presented a plan to the California State Medical Society by which terms of percentage were to be replaced by terms of dilution. Given a fraction of dilution it is a simple matter to determine the percentage of any given milk. For instance: given an average top milk (top 1-3 of a quart bottle which has stood in the cold for four hours) which will contain 10% fat, and 3.5% proteid, using one part of this to two parts of diluent, a mixture 1-3 milk is made. To determine the percentage composition multiply 1-3, the fraction of dilution, by the percentages of constituents contained in the top milk, 10 for the fat, 3.5 for proteid and 3.5 for sugar. The result will be for the fat 3.3; for the proteid 1.2%, and for sugar the same as for the proteid. Any other fraction of dilution may be treated in the same way. For instance, two ounces of the same top milk added to 11 oz. of diluent makes the milk 2-13 of the mixture. To make the calculation it is only necessary to multiply 2-13 by percentages as contained in the milk used, if this is top 1-3, 10 for fat, 3½ for proteid and 3½ for sugar. The carbohydrate percentage is augmented by putting into the mixture, sugar to make 5%, that is to say—1 oz. to 20. By this simple means a physician may direct the nurse or mother in terms of dilution and at the same time with a sufficient degree of accuracy, and without much trouble know the percentages he is feeding. On the other hand by always using definite proportions from a bottle of milk, that is the upper half or the upper third, as a basis for making up formulae, he can with equal facility arrive at the desired number of ounces to make a certain percentage composition in the food. The proportion simply is: the given percentage; desired percentage; given quantity; desired quantity.

For instance, to find how many ounces of upper 1-3 milk are necessary to provide 2% fat in 40 oz. of mixture, if translated into the terms of the above proportion the problem would be stated 10% : 2% :: 40 oz. : x oz., that is to say 10 x=80, x=8 oz. of the 10% milk in 40 oz. of mixture. In terms of fractions it may be stated thus: multiply the percentage desired by the quantity to be made up and divide by the percentage occurring in the used milk. The result will be the number of ounces of milk necessary to be put into the whole quantity in order to give the desired percentage of fat. If one uses the top third, the percent of proteid in the mixture will be 1-3 that of the fat. If one uses the top half of the milk the percentage of the proteid will be ½ that of the fat. After a few days' practice anyone using these methods can, without the need of pencil or paper, arrive at an accurate estimate of his percentages, or, on the other hand, at a proportion that will give the desired percentage of the mixture.

As necessary as it is for us to abide by percentage feeding because it takes cognizance of the digestive capacity, there is no doubt whatever that it is equally necessary for us to have some means of checking off the nutritive demands of the child and the number of heat units contained in his daily food supply. This we can do only by using the caloric method. In the paper already mentioned which the writer presented to the California Medical Society, was given a simple plan for determining the caloric values of the percentage mixtures based upon the fact that one litre of a one percent mixture will contain 10 grams of the substance in suspension. Therefore, a litre of percentage milk mixture containing 3-5% fat, 1½% proteid and 6% sugar will have of these substances in each litre actually of the fat 35 grams, of the proteid 15 grams and of the carbohydrate 60 grams. Multiplying the 35 grams of fat by the caloric factor for fat, 9.3 we have 325.5; multiplying the added proteid and carbohydrate by the caloric factor 4.1 we have 60+15=75 x 4.1= 307.5; adding together the calories supplied by fat, carbohydrate and proteid we find a litre of the mixture contains 633 calories.

A litre may be assumed to contain 34 ounces: dividing 633 by 34 we find each ounce of the mixture has a heat value of 18.6 calories which varies but little from the heat values of whole milk but the food presented is much more digestible than whole milk would be. To complete the caloric equation the only other figures we need to remember are the caloric demands of childhood with their variations to keep in mind that in its first three months a child should be supplied with from 40 to 45 calories per pound per day; and, that after that up to 6 months of age from 35 to 40 calories per pound per day are needed and in the second half year 30 to 35 calories will meet the daily needs of the infant. It must also be remembered that thin wasted children need food that will supply higher caloric values than do well nourished infants.

Of late the writer has adopted a rough method of determining an approximate caloric value for the percentage mixtures he uses, which although not quite accurate, is sufficiently so for practical purposes. An ounce of 4% fat milk, as supplied by most certified dairies, may be assumed to equal 20 calories. The top half of a quart bottle of the same milk taken under the ordinary method may be assumed to have a caloric value of 30, to the ounce and the caloric equivalent of each ounce of the top 1-3 may be reckoned at 40 c. One ounce of sugar contains 120 calories; and one ounce of sweetened condensed milk of a standard brand has 60 calories to the ounce. These constants make the determination of the caloric value of mixture very easy, multiply the constant by the number of ounces of the milk in the day's feeding and add in the number of calories provided in the sugar.

But after all digestibility and absorbability of food mixtures depend only in part on composition and the vagaries of nutrition and of the utilization of food rest on many factors besides a well considered energy quotient. It must always be remembered that cow's milk mixtures are not the normal food for human infants and that the child's tissues must undergo a process of adaptation to make it possible for the foreign albumens and fats to be digested, absorbed and utilized. Fortunately the adaptability of the greater number of babies born is rapid and positive, but there remains a proportion of infants whose tissues adapt themselves badly or not at all to the differences of labor necessary to elaborate and utilize the chemical combination of fat, proteid and salts as they occur in bovine milk, which combinations vary so widely both in quantitive and qualitive measure from those that occur in human milk. It is usually from this last and smaller group that the infants the physician has to feed are drawn; for it is this group that provides the athrepsic infants that become the bane of the practitioner's existence. The babies of the larger class can be fed by any one, by almost any system of feeding and they will thrive, defying the utmost physiologic idiocy to more than temporarily interfere with their progress.

Of the greatest importance in feeding cow's milk mixtures is the fact that cow's milk leaves the infant's stomach much less promptly than does human milk so that at any age it is a mistake to feed children who are not ill oftener than every three hours. For that matter even breast fed children will thrive better if the feedings are given at three hour intervals. It is also a mistake not to increase the concentration of the food as rapidly as the child's digestion will permit. The dilutions that work out most satisfactorily in practice are: during the first two or three months, one to three; during the fourth and fifth months, one to two; one to one at six months and whole milk at the tenth month, at which time it is essential that other foods such as light, well-cooked porridges, rusks, zweibach, fruit and meat juice and milk soups made up with small amounts of cereals or green vegetables should be added to the dietary. During this period the caloric value of the food taken should be checked from time to time against the child's nutritive demands.

With all our methods for measuring our infant's food, and providing it digestible mixtures, we must not lose sight of the fact that it is not only the proportion of the food ingredients that affects digestibility, nor is it only the ingested food itself which plays a part in the nutrition. The qualitative differences in fat, salts and proteid affect digestion to a marked degree. A great deal has been written and taught about the digestibility and indigestibility of fats and proteids. Some ardent writers claim that there is no such thing as proteid indigestion, that all the digestive troubles of infancy may be laid at the door of the fats, and others are equally sure that fat has nothing whatever to do with the case and that the vicious influence comes entirely from the ingested proteid. Some American authorities feed extraordinarily high percentages of fat and their babies do well as any one who knows their work can attest. The French and Germans on the other hand seem to have trouble with low percentages of fat and none of the trouble with proteid that the Americans unquestionably do have. Some German authors have gone so far as to state that the curds found in infants' stools rarely consist of proteid. The facts that are overlooked on both sides are, that in Germany milk is invariably sterilized and that the process of sterilization though it retards digestion renders proteid more digestible and fat much less so, than in the case with these constituents in raw milk and these facts will account to a great degree for the differences in the experience of equally good observers. Proteid curds do occur and occur often in stools of babies, and if one doubts this it is a simple matter to prove; one has only to feed skimmed milk which is unsterilized and unclean and to examine the bowel movements.

The most fertile source of proteid indigestion lies not in the composition of food but in its contamination. Hart and Van Sykle's work has shown that if a milk becomes markedly acid before ingestion, that its content of calcium casein cannot help but form tough, insoluble casein hydrochloride, instead of friable, easily digested, free casein or free para-casein, and when this material enters the intestine it acts as any other irritant does and causes a rapid emptying of the bowel, and when the bowel is rapidly evacuated, unquestionably fat and fatty acids appear in the stools but this is no proof that the fat has been the cause of the indigestion although it is quite presumable that the changes taking place in the fat due to bacterial growth in the milk may hydrolize the fats and render them irritant and indigestible. There is no doubt whatever that fat itself does cause proteid indigestion. Shaw of Montreal, has shown that the curds sometimes considered to be fat or fatty acids or soaps may be simply masses of casein coated with these bodies.

Again we may put a perfectly proportioned mixture of a proper energy quotient into a child's stomach and even if it is breast milk if we have not paid due care and attention to the infant's hygiene, the child will not thrive. The control of the infant's surroundings is as essential as is control of its food. Sunshine and oxygen are as necessary to the growth of babies as to the growth of plants and every hour of the twenty-four should be spent in a well ventilated atmosphere and every hour that it is possible for the child to spend in the sunshine, it should be there. Utilization of food cannot be well performed without proper exercise and it is an absolute necessity that the baby should have freedom in its early months from swathing bands and heavy bedclothing and that later on it should be allowed freedom to kick and roll and play by itself to its heart's content. A daily bath followed by spongings, cooler and cooler, as the child grows older, and these in turn followed by brisk rubbing, also aids in the proper utilization of the food.

The matter may be summed up as follows:

1st—Any system of artificial feeding must be based upon a supply of clean milk. If this is not to be had a poor substitute may be come at by sterilizing unclean milk.

2nd—The child must have sufficient time between feedings for proper digestion, that is, at least three hours.

3rd—The food should be supplied as near in proportional composition to mothers' milk as is possible, remembering always that it is chemically impossible to make either the proteid or fat of bovine milk into anything approaching that of human milk.

4th—When a suitable percentage mixture is elaborated, its caloric value should be determined so that the nutritive demands of the child are fully met, and what is even more important, not over supplied.

5th—Particular attention must be paid to the hygiene of the infant and of its surroundings.

6th—Enthusiasm for a system should never be allowed to outweigh the knowledge that an infant is a human individual and that as such it is subject to idiosyncrasies that may upset the most exquisitely reasoned systems and leave the reasoners abashed and gaping into the vast abyss of their own ignorance.

High Fat Percentage in Infant Feeding.—DR. THOMAS S. SOUTHWORTH, attending physician, Nursery and Child's Hospital, New York, J. A. M. A., Oct. 10, 1908, closing his critical article says:

"While much of the present paper has been devoted to pointing out the evils too often encountered from the unintelligent use of unduly high fat percentages and, perhaps, equally frequently from blind persistence in the undiscriminating use of percentages until recently recognized as ordinarily suitable for children at different ages, I wish it clearly understood that I do not intend to make any sweeping denunciation of the usual formulæ for children to whom they are suited. I still advocate and employ them. But the mastery of the rules and formulæ commonly employed in infant feeding is after all, only the essential primary course in feeding. The true test of our competency to feed infants is to be able to interpret rightly definite indications and to know when and how to depart from such formulæ.

While the part played by fat in causing the digestive disturbances of some infants should receive more general recognition, we face another danger that the crusade against fat will be carried to extremes. But we may rest assured that the pendulum of opinion if swung too far in that direction, will eventually seek a new equilibrium in that middle ground which recognizes that there are almost as many grades of tolerance as there are infants, and that the highest measure of success will always be found where the balance between the fat and the proteids is adjusted after intelligent observation to the especial digestion and requirements of each child.

THE TEACHING OF PEDIATRICS IN EUROPEAN SCHOOLS. *

By H. M. McClanahan, M. D.

PROFESSOR OF PEDIATRICS, MEDICAL DEP'T. UNIVERSITY OF
NEBRASKA; PHYSICIAN TO CHILDREN'S DEP'T. BISHOP
CLARKSON MEMORIAL HOSPITAL; AND PHYSICIAN
TO CHILD SAVING INSTITUTE, OMAHA,
NEBRASKA.

This short paper will relate my experience in pediatric study in Vienna and London, making mention of a number of the teachers and of the laboratory advantages. It will probably contain nothing new. But if it is in any way of benefit to any physician contemplating the study of pediatrics abroad, I will feel repaid for having written it.

After two months of travel in a number of the European countries, during which period the subject of medicine was banished as far as possible from my mind, I arrived in Vienna rested in mind and body and anxious for work. Upon reflection I quickly learned that pediatric practice presupposes a thorough knowledge of the elementary branches of medicine. Among many in our profession the impression prevails that disease in children is a simple subject; indeed, the thought prevails that any one can treat a sick baby, but that it requires a competent physician to treat an adult. This is certainly a grave error and careful thought will convince any physician that this field of medicine requires as complete a ground work of information as any other branch of medicine.

---

*Read at the Second Annual Meeting of "The Association of American Teachers of the Diseases of Children," Chicago, Ill., June 1, 1908.

In no department of the practice of medicine is a knowledge of the elementary branches of anatomy, physiology and chemistry, more essential. Every science related to medicine is important to the pediatrist; especially is this true of haematology, histology, gross and minute pathology. As a large number of the diseases of children are due to micro-organisms and indeed many of the prenatal diseases are due to the same cause, at least an elementary knowledge of bacteriology is valuable. No field of medicine offers such an extensive field for research and in the department of pediatrics the bacteriologist will find a rich harvest. Indeed, it may be safely affirmed that in no field of practice of medicine is the immature and poorly grounded specialist more dangerous than in pediatrics.

Having in view, therefore, a review and study of many of the above mentioned branches as well as the study of clinical pediatrics, my work was arranged to accomplish both objects as far as possible. In no medical center are the opportunities for studying these branches in short courses and in small classes so advantageous as in Vienna. While it is true that these short courses only touch the hem of the garment, they are to a physician of experience valuable not only in what he actually learns, but in the zest they give to his study. When it cannot be arranged to take some of these courses in small classes it is usually possible to obtain private instruction.

I took a number of the courses in the various regular classes and I also had the privilege of taking private instruction in St. Ann's Hospital from Dr. Spark in the examination of the new born. At the Polyclinic Hospital I took private lessons under Docent Noble in serum therapy, lumbar puncture, etc., also private lessons in physical diagnosis under Docent Brown in the Algemeine Krankenhouse. This was to me exceedingly valuable.

It is well for those expecting to study in Vienna to remember that all medical courses, except in one or two independent laboratories, are under the control of the American Medical Association of Vienna. This is a society made up largely of American physicians. It is necessary to register your name in the classes you desire to join and it will sometimes happen that as the classes are already full, there will be delay. By many of the physicians studying there, the taking of private lessons is condemned as establishing a bad precedent. Personally, I feel that each one must decide for himself whether he will wait and join the regular classes or procure private instruction.

My work in the clinical study of children's diseases was taken in St. Ann's Kinderspital under the direction of Docent Hamburger, who is Professor Escherich's first assistant. Dr. Hamburger speaks English fluently. He is a courteous gentleman and an accomplished physician. The ward work begins promptly at eight o'clock and the hours from eight to ten are profitably spent in that work. But two visiting physicians are admitted so that the opportunity for getting close to the cases is excellent. He usually began his work by examining the new cases, the resident physician having already prepared a history of the case. In this work he was always methodical and thorough. He would discuss the case freely and give opportunity for asking questions. I could but admire his frankness. If there was any question about the diagnosis, the case was held in abeyance for further investigation.

After completing the new cases, the rounds of the various wards in the main building were made after which the contagious disease department was visited. This is a separate building situated about one hundred feet from the main building. Here there are almost daily opportunities for witnessing the operations for intubation and tracheotomy in the diphtheria wards. The skill and dexterity displayed by Dr. Hamburger and his assistants in this work is remarkable.

In the scarlet fever ward abundant opportunity was given for seeing this disease in all its stages. The treatment of the disease is very simple. Patients are kept in bed upon a liquid diet and the condition of the kidneys carefully watched. In the malignant type of cases, Moser's Serum is used. In the mild cases, the treatment is almost entirely dietetic, but all cases are carefully watched until desquamation is complete.

The ambulatory clinic is held from two to four P. M. on the first floor of the main building, which is well arranged for this purpose. This is a large clinic. While the cases are often hurriedly examined, there is never any carelessness. For example, if at a glance the child is seen to have any suspicious symptom it is held for further examination. But two physicians are admitted to this clinic in each class. The custom is that each physician has a case assigned to him which he examines and then refers it to the assistant in charge for confirmation or correction of his diagnosis. In this way the physician not only has the opportunity of seeing the case, but of actually handling and examining the same. The rule of having each child undressed before it is placed upon the table for examination is excellent. The rule is to inspect the throat in each case and if it appears suspicious in any way a swab is at once taken and a microscopical examination made. I was impressed with the number of cases of rickets seen among the children. Certainly a larger percentage than are to be seen in any clinics in this country.

The laboratory in the hospital is large and thoroughly well equipped. Each day the internes do splendid work here in blood, urine, feces and sputum examinations. Here is seen exemplified the utility of laboratory methods in practical clinical work. I was impressed with the fact that a personal knowledge of the case and its clinical history gave increased interest to the laboratory work and that hospitals in our own country could adopt this method of procedure with benefit.

The post mortem work there was thorough and the visiting physician could not but be impressed with the fact that it is entirely honest. No effort was ever made to cover up the facts in order to protect the physician, the sole object being to ascertain the truth, both as to the gross and microscopical pathology. I never before realized so fully that a hospital is not only a haven for sick children, but also a place for the study of diseases in children. It is unfortunate that in our own country managers cannot be made to realize that this dual function of a hospital is not only humane, but is the only direct method of advancing the cause of medical science. The rule in St. Ann's is that nothing that can be proven by laboratory methods or physical examination is to be accepted without such proof.

Another lesson that many physicians might learn with benefit to themselves is kindly consideration for their patients. Resident and visiting physicians were uniformly kind to the children. The fact that these children were poor and humble did not in any way mitigate against them. Naturally the children in turn appreciate this treatment. They not only looked with pleasure to the coming of the physicians, but submitted gracefully to being examined. Taken as a whole, the work is of a high order and I was not surprised that in most of our text books reference is made to the work in this grand old institution.

Without in any manner criticising the methods of treatment, I was impressed with the fact that in diphtheria they give less anti-toxin than is the practice in this country. The initial dose was usually about three thousand units and seldom or never was the dose repeated. They do not have the same confidence in intubation that obtains in our country. If decided relief is not given in a few hours, intubation is followed by tracheotomy. It was my privilege to see some remarkable work in removing membrane from the bronchus after the incision was made and before the tube was introduced. They do not practice polypharmacy. More dependence is placed upon rest, diet and hydrotherapy than upon drugs.

In a separate building in the same yard is the milk laboratory. This building is well situated for its purpose and is well worth visiting. The general principle of the methods of infant feeding employed there are whole milk diluted with water with the addition of sugars, to wit: cane sugar, milk sugar and malt sugar. The use of buttermilk is largely confined to cases of impaired digestion. For example, a child convalescing from any acute intestinal trouble is placed upon buttermilk until its digestion is improved when it receives diluted milk. As I gathered, they do not use buttermilk as a regular feeding for well children. Many babies are fed from this laboratory. The mothers are required to bring the infants once a week for examination and weighing, after which the food formula is given to the nurse in charge. Then the food for twenty-four hours is prepared in the laboratory and sent to the home. Percentage feeding as employed in this country, is not used in Vienna.

Before concluding, I wish to mention briefly two cases: First, that of a little girl who had received a scalp wound and developed tetanus. She was treated by the use of the antitetanic serum which, however, was injected into the spinal canal. The case recovered, although the trismus persisted for a number of weeks.

Second, the case of a little girl, three years old, suffering from cystitis, the urine containing pus and many colon bacilli. The case finally terminated fatally from exhaustion. The post mortem revealed the following: the appendix was attached to the bladder and a communication established between the bladder and the lumen of the appendix.

In looking back over my work in Vienna I would sum up my impressions as follows: 1. Thoroughness. 2. The true scientific spirit. 3. Kindliness. 4. The absence of any taint of the spirit of commercialism.

London.

The opportunities for clinical study in London in all lines of work are excellent and the amount of clinical material is enormous. The teachers are men of wide experience and of profound knowledge, but the various hospitals are widely scattered and it is not possible to accomplish as much, unless the work is limited to one line, as in Vienna, because of the loss of time in going from one institution to another. There is no central bureau of information as in Vienna so that a physician has greater difficulty in learning where the various clinics are located. There is not the opportunity in London for doing special work in small classes, and private instruction, as far as I could ascertain, is impossible to procure. I have no hesitancy in saying that a physician desiring to do much laboratory work will find it to his advantage to go to Vienna. On the contrary, if he desires to see an enormous amount of clinical material in any line he will find it in greater abundance and variety in London.

My work in London was taken at the Hospital for Sick Children, Great Ormond Street and I can only speak of the advantages of other hospitals from what I was told by other physicians. The Great Ormond Street Hospital is the largest institution for children in the world. The In-Patient Department has accommodations for over two hundred children and during the year 1907 more than three thousand children were received in the wards. In the Out-Patient Department there were treated during the year 1907 one hundred thousand patients. It presents a variety of clinical material for the study of medical and surgical diseases in childen unrivaled in the world.

The work in this institution is so arranged that a physician can spend almost the entire day profitably. My work in the wards was taken under the direction of Drs. Garrod and Batton, each gentleman visiting the wards twice a week. The opportunity for seeing the individual cases is not as good here as in Vienna because more than two physicians are permitted to do the wards with the visiting physician. I did not do work in the contagious disease department, so cannot speak of the facilities for study in those wards. However, the medical wards that I visited under the above named physicians afforded a rich variety of cases. Drugs are more freely used here than in Vienna. The Out-Patient clinics are held in the basement of the hospital each morning from 9.30 to 12 and in the afternoons are held the special clinics. My work in the dispensary clinic was taken under the direction of Drs. Poynton, Still and Hutchinson, each gentleman holding a clinic two days a week. These clinics are all abundant in number, and rich in variety and the clinicians are thoroughly competent men. Here it is possible to see many of the rare diseases of infancy and childhood and the opportunity for the study of heart lesion is almost unbounded.

We frequently had the privilege of seeing cases of amaurotic family idiocy, mongolianism, infantalism, gigantism and the various dystrophies. The Surgical Out-Patient Clinic, under the direction of Mr. Waugh, is exceedingly valuable. The opportunity here for the diagnosis of tubercular lesions and all varieties of orthopedic deformities is excellent. Mr. Waugh's work in tonsillectomy is the best I have ever seen. One afternoon a week is given up to the treatment of the diseases of the eye and another one to the diseases of the ear and one also as a dental clinic. In this latter clinic a physician realizes how much this important subject is neglected and how many cases of glandular enlargement about the neck and digestive disturbances and diseases have their cause in morbid conditions of the teeth. Part of one afternoon is given over to the operations of circumcision. I saw twenty-one operations during one afternoon. Another afternoon is given over to operations for tonsils and adenoids. The Out-Patient Department, taken as a whole, affords an opportunity for the study of the diseases in children in all lines almost beyond words to describe.

The opportunities for studying infant feeding are not as good here as in Vienna. The majority of the dispensary cases here are over a year old. Modified milk is not used by any of the physicians, as far as I could ascertain. Dr. Poynton is very partial to the sodium citrate. He is convinced that it is valuable in that it aids in digesting the curd.

The post mortems are held each day at 1.30. This work is done by Dr. Reginald Miller. It was surprising to me that so few visiting physicians availed themselves of the opportunity of seeing this work, because no part of my work was to me more valuable or instructive and I had the privilege of seeing over one hundred post mortems during my attendance at this hospital.

There is no question in my mind but that rheumatism in children is more frequent in England than on the Continent or in our own country. The investigations of Dr. Poynton in the etiology of rheumatism are now widely recognized and I left with the conviction that rheumatism is certainly an infectious disease. It is the conviction of many of the clinicians that chorea is simply a manifestation of rheumatism.

The National Hospital for nervous diseases is located very near the Hospital for Sick Children. The clinics there, which are held four afternoons a week, are very instructive. While, of course, they are not limited to children, yet many of the nervous diseases of children are to be seen in those clinics.

In conclusion, I do not believe that London as a medical center is appreciated at its true value. If there were the opportunities for laboratory work and private instruction as there are in Vienna it would be to my mind the greatest medical center in the world.

Treatment of Oxyuris Vermicularis.—Nigay advises the following course for the treatment of thread worms:

For a Child of Ten Years of Age.

1. Keep the patient for three days on milk diet.
2. Give each morning the following powder:

℞	Santonin	gr. ¾.
	Calomel	gr. iss.
	Sacchar. Lactis	gr. xv.

Misce. Fiat pulvis. Mitte tales numero III.

3. Give every evening an enema of glycerine, pure, or diluted with an equal quantity of water.
4. Apply around the anus the following ointment:

℞	Ung. Hydrarg.	ʒij.
	Glycerin. Amyli	ʒvi.

Misce. Fiat unguentum.

Nos. 3 and 4 are to be continued for ten days.

5. If worms are still found in the stools, give two of the powders, and an enema of:

℞	Ferri Sulph.	gr. xlv.
	Glycerini	℥ij.
	Aq.	ad. ℥x.

Misce.

6. In the case of girls, the ointment must be also applied to the vulva to prevent the worms from entering the genitals.
7. The child must be prevented from scratching itself, and from putting the hands in the mouth.

TREATMENT OF SUMMER DIARRHEA IN INFANTS.*

By McGuire Newton, M. D., Richmond, Va.,

PROFESSOR OF PEDIATRICS, UNIVERSITY COLLEGE OF MEDICINE;
ASSOCIATE PEDIATRIST TO THE VIRGINIA HOSPITAL;
VISITING PHYSICIAN CITY HOSPITAL.

In accepting the assignment of the subject, The Treatment of Summer Diarrhea in Infants, I take it that it was the intention of the committee on program that I should discuss the treatment of the infectious diarrheas of infants which prevail during the summer months, irrespective of whether they belong to that class in which there are symptoms of intoxication of varying intensity, with little or no evidence of pathological change, or to that class in which the symptoms indicative of decided pathological lesions predominate over all others, rather than confine myself to simple gastroenteritis which has for its synonym summer diarrhea of infants.

Unfortunately, I cannot bring to your attention any new or original method of treatment, but this inability is no reason for neglecting a subject of such importance. On the contrary, it is my opinion that we should devote one meeting each year to its free discussion in order that each of us may have the opportunity of learning from the experience of the others. Consequently, with the hope of provoking free discussion, I will follow the plan of the leading text books and present separately the *prophylactic* and *hygienic, dietetic, medicinal* and *local* measures of treatment.

The *prophylaxis* consists principally in a campaign of education which has for its object the education of the public in four fundamentals: (1) That all communities should enact and enforce laws providing for cleanliness in the production and handling of milk, and making it compulsory that all milk should be immediately cooled to 50° F. or below, and kept so until delivered to the customer. (2) That the consumer should make every effort to keep the milk clean and cold in the home. (3) That the power of resistance of infants is impaired by improper feeding, whether improper on account of irregularity or carelessness or on account of the use of foods which either overtax the digestive organs, or do not supply sufficient nourishment for the growing child. (4) That to all children strong enough to maintain normal temperature, the use of blankets and unnecessary flannels during the summer months is irksome and consequently detrimental to health. Therefore, these articles should be dispensed with at this time, and every effort made to keep the children as cool as possible.

---

*Read before the Richmond Academy of Medicine and Surgery, July 22, 1908.

I am unable to appreciate the wisdom of sending infants from the comforts of home to cramped, uncomfortable quarters in the country with the idea of preventing diarrhea; and particularly so when at home they are able to secure an abundance of clean milk produced under the surveillance of the health authorities; while in the country a smile of derision is ofttimes the reward for any suggestion that milk could possibly be a cause of disease.

For delicate infants more benefit is to be expected from a change of scene and climate than for those of maturer years. But so long as the average farmer does not seem to realize what constitutes dirty milk and the part played by it as a cause of illness among infants, I do not think we are justified in indiscriminately ordering delicate infants to the country without first receiving assurance that more than ordinary care is to be taken in milking and in the handling of the milk.

The *hygienic* treatment consists in the use of a daily sanitary bath, and of measures to keep the patient as cool and as comfortable as possible; an abundance of fresh air; the frequent disinfection of the attendant's hands to prevent reinfection; and the prompt disinfection of soiled napkins.

In the *dietetic* treatment, the authorities are unanimous in advising that with the first symptoms all food containing milk be withdrawn, and in its place plain water, albumin water or barley water be substituted.

Here arises one of the most important questions in our treatment, which is, how long should these rest foods be continued? In the breast fed, our authorities advise that the infant be put to the breast in twenty-four or thirty-six hours; while in the bottle-fed, who are less able to stand a long continued withdrawal of nourishment, we are told to withhold all milk until the stools approach normal in color, consistency and frequency, owing to the danger of reinfection from the bacteria present in the intestinal tract, which find in milk an excellent culture medium; but they fail to tell us why cow's milk properly modified, acts as a better culture medium in the intestinal tract than woman's milk.

While I am not to be understood as proposing to irritate an already irritated, if not inflamed, gut with the tough curd of cow's milk, I do think we should constantly bear in mind the far reaching effect of the rapid wasting consequent on the depleting diarrhea and continued high temperature, and endeavor to combat it as soon as possible, by the administration of food of the highest nutritive value compatible with the capacity of the crippled digestive organs.

With this end in view my routine plan is to use barley water or albumin water for three days, varying from one to the other according to the condition of the stools; for instance, if they are offensive, indicating proteid decomposition, barley water is used; if they are sour and excoriate the buttocks owing to acidity resulting from carbohydrate fermentation, albumin water is given.

On the fourth day, the use of whey, to which milk sugar has been added in the proportion of one-half teaspoonful to an ounce, is begun. For a day or two this is given at every other feeding, after which the albumin water or barley water is withdrawn entirely. If the milk from which it is prepared is from a suspicious source, the whey is sterilized. If the stools show lumps of fat which dissolve on the addition of ether, the whey is made from skim-milk. If the stools show curds or lumps on which the ether has no effect, the whey is peptonized.

With evidence of improvement in the digestion, peptonized skim-milk to which milk-sugar is added, in the proportion of one-half teaspoonful to the ounce, is given in place of the whey. The use of skim-milk for peptonization is particularly emphasized, inasmuch as this process has no effect on fat, and as the presence of the fat interferes with the gastric digestion on which we have to depend while the intestinal tract is the seat of disease. With continued improvement, peptonized whole milk is gradually substituted and the degree of peptonization gradually reduced. The peptonizing tubes carried in stock by all druggists are to be used for peptonization of whey or skim-milk; and the process is the same as for the peptonization of whole milk, with the exception that no water is added.

The interval between feedings is never less than three hours; the amount of each feeding is not more than two-thirds of the quantity given when in health, and the degree of dilution is greater than from well infants of corresponding age. Between the feedings, water is frequently administered.

By following this plan, I believe that milk mixtures sufficiently strong to meet the demands of the patient can be safely given far sooner than if we follow closely the writings of the authorities, with the result that the convalescence will be hastened and the dangers of malnutrition and marasmus lessened.

In our *medical treatment* the remedies of most value are calomel, castor oil, bismuth, opium and alcohol. If there is a tendency to nausea or vomiting, it is well to begin treatment by washing out the stomach, and then administering one or two grains of calomel which is to be followed in six hours by one or two drachms of castor oil. If, on the other hand, there is no irritability of the stomach, the dose of oil should be administered immediately to be followed in an hour or two by a dose of calomel which is followed in six hours by a second dose of oil.

In this way, the evacuation of the bowels is hastened and the efficiency of the calomel increased.

I don't believe that there is any plan more universally followed by physicians than the administration of the initial dose of calomel and castor oil in these cases, but, unfortunately, a large number fail to recognize the indications for a repetition of them, which are frequently present. These indications are manifested by a continuation or recurrence of offensive stools; or by evidence of inactivity of the small bowel with retention and decomposition of its contents, followed by absorption and the resulting symptoms of intoxication, such as increasing or continued high temperature and nervous symptoms, which often simulate those of meningitis, the absence of bismuth in the stools when this drug has been administered; or the presence of abdominal distension which is not relieved by irrigation of the colon are often the first signs of this intestinal inactivity. I am convinced that calomel or castor oil will render us far greater service in this condition than any other drug or combination of drugs, provided they are given sufficiently *early* and repeated often enough.

Of the drugs administered with the view of reducing the number of stools, bismuth subnitrate takes the lead. Its value is due to the fact that it possesses astringent, sedative and antiseptic properties. But to be of service it has to be given in doses of sufficient size, never less than ten grains every three hours to the youngest infant. The size of the dose is best regulated by our ability to give it. At present, I am prescribing it in powders and directing the nurse to mix it with a small quantity of water in a teaspoon, from which it is pushed into the child's mouth by means of the finger, rather than trying to suspend it in vehicles which are most efficient in distressing the stomach.

In those cases accompanied by large fluid stools, two to four drachms of bismuth may be suspended in from two to four ounces of thin starch water and injected into the colon immediately after irrigation.

In the consideration of opium it is best to begin by mentioning the contraindications to its use which are: It should not be given before the intestines have been emptied by means of purgation and colonic irrigation; it should not be given when the number of stools is small, i. e.., four or five in twenty-four hours; it should not be given when cerebral symptoms and high temperature exist with scanty stools. The indications for its use are to relieve pain and check excessive peristalsis. It is particularly valuable when there are large fluid stools attended by symptoms of collapse, as in the severe forms of intoxication commonly known as cholera infantum; and during convalescence, when with little if any fever, there is a continuance of the intestinal irritability resulting in the stimulation of peristalsis and a consequent stool whenever anything is put in the stomach.

Regarding its administration, it should never enter into a composite prescription for the reason that it is often desirable to increase or decrease the size of the dose, or withdraw it entirely, without interfering with the other medication. Enough should be given to produce the desired effect; the interval between the doses should not be too short; and it should be discontinued as soon as possible. The preparation should vary with the indication, as when there is pain throughout the abdomen with frequent stools of some consistency, paregoric in doses of from five to twenty drops is to be used; when the pain is due to rectal tenesmus, the best result is to be obtained from the use of the old laudanum and starch water enema, made by adding from two to four drops of laudanum to an ounce of starch water. When the stools are frequent, large and fluid and associated with symptoms of collapse, as seen in the severe forms of intoxication, morphine, in doses varying from one one-hundredth to one-sixtieth of a grain should be administered subcutaneously. In those cases in which excessively frequent large, fluid stools are associated with high temperature and severe nervous symptoms, there should be no hesitancy in administering morphine hypodermatically, provided a sufficient dose of castor oil is given at the same time.

In many of the mild cases there is no need for the use of stimulants, but in all cases of long duration, they will be necessary. Under these circumstances alcohol is to be preferred. The indications for its use may be stated as, cold extremities, weak pulse and other evidences of prostration whenever they may occur. Of the alcoholics, brandy is the most serviceable, four to six drachms being administered to a child one year of age during twenty-four hours. The quantity to be used during the day had better be diluted with from six to eight parts of water, and small quantities of this given at short intervals. In cases of severe intoxication, or when there is sudden depression. brandy should be administered subcutaneously. If an effort is being made to nourish by means of the alcoholic solutions of predigested foods, which are too familiar to all of us, brandy should not be administered as, in all probability, the patient is already receiving more alcohol than is good for him.

Of the *local measures,* the most important are irrigation of the stomach and irrigation of the colon.

Irrigation of the stomach is particularly serviceable in those cases which are ushered in by violent and persistent vomiting. It is very easily accomplished, the apparatus necessary being a small catheter which is connected with a funnel by means of a rubber tube about two feet in length. The catheter is introduced through the nose into the stomach. The normal saline solution is used, the washing being repeated until the solution returns perfectly clear.

The importance of irrigation of the colon is second only to the administration of calomel. By it, any residue of feces or irritating secretions which may have remained in the lower bowel or rectum is removed; and as it stimulates peristalsis, it favors the evacuation of the small bowel. It also stimulates the heart's action and adds to the body an amount of fluid to compensate for the drain resulting from the diarrhea; and it has a soothing effect which is far greater than that following any justifiable medication.

It is indicated in all cases of diarrheal disease. In the milder cases it may not be necessary to repeat it, but in the severe cases it is to be used once a day, if not oftener, until convalescence is well established. When properly done, the effect is often sensational, but disappointment will certainly follow carelessness. For the best results, the physician must personally attend to the irrigation unless he has the assistance of an exceptionally skilful nurse who recognizes when the tube has *not* passed into the colon. Owing to the difficulty of procuring small rectal tubes, a catheter can be substituted. This should be of sufficient calibre and stiffness to prevent it from kinking. The child should be placed on its back with the buttocks slightly elevated, with the reservoir containing the solution, not more than two feet higher than its body. The tip of the catheter is introduced, enough of the fluid to cause the rectum to empty itself is allowed to run then with the solution flowing to open the way for it, the catheter is slowly passed into the colon, or for a distance of twelve inches, care being taken that it does not double up on itself. The irrigations should be continuous until the return flow escaping along the side of the catheter is perfectly clear. Two quarts are usually sufficient, but it may be necessary to use as many gallons.

There are three questions frequently asked concerning the use of colonic irrigation, which are: (1) Should it be used when there is much mucus and blood in the stools? (2) Should it be used when there is much fluid in the stools? (3) What are the contraindications to its use?

If the condition is acute and the stools contain mucus and blood, irrigate, for the reason that retention and decomposition of the mucus and blood irritates the bowel, keeps up tenesmus and retards recovery. In this condition, the irrigation should be followed by injecting into the rectum an ounce of starch water containing from two to four drops of laudanum. If acute symptoms have subsided, irrigation should not be used oftener than twice a week, inasmuch as it has a tendency to encourage the production of mucus.

If the stools contain much fluid, irrigate, for the reason that this fluid in the colon irritates the mucous membrane and produces marked pathological lesions similar to those which separate cases of ileo-colitis from intestinal intoxication, and also for the reason that irrigation supplies fluid to overcome the depleting effect of these watery stools. So long as there is much fluid, irrigation should be used twice a day; and after the solution has returned, it is beneficial to inject two to four drachms of bismuth suspended in two to four ounces of starch water.

The only contraindication to the use of irrigation is the inability to secure the necessary apparatus.

I have irrigated a large number of cases, and so far, have never had occasion to regret it, though frequently the patients were so ill that I considered it the part of prudence to inform the parents that death might occur during the treatment. In all of my cases improvement has followed, but, of course, in some this was only temporary.

In choosing a solution, the normal saline offers the greatest service during the acute stages. If after the acute symptoms have subsided mucus persists, this should give place to a solution of tannic acid in the proportion of one drachm to the pint.

The temperature of the solution varies with the patient's condition. Ordinarily it should be about 100° F.; if there is sub-normal temperature it should be about 110° F.; if there is much fever, it may be as low as 80° F., or lower.

The other local measures of treatment are the application of heat and counter-irritation to the abdomen for their soothing effect; the use of cold for its antipyretic effect; and the application of heat or mustard when there is depression of the vital forces; but the indications for their use and the results to be expected are similar to those under other circumstances.

SOME PECULIARITIES OF THE ANATOMY OF INFANTS.*

By R. B. Gilbert, M. D.,

Louisville, Ky.

In the brief time allotted to me on this occasion, it would be inexpedient to attempt an extended consideration of all the peculiarities of the anatomical structures as they appear in the infant. We shall, therefore, briefly notice a few of the most striking features of the gross anatomy of several structures,—a practical knowledge of which is of value from a clinical and physiological standpoint.

I shall confine my remarks to the anatomical conditions as they appear in the young infant. The gradual changes that take place as age advances and development proceeds, is indeed an interesting and profitable study, but a full consideration of the subject would require more time and space than we now have at command.

As teachers of the subject of Diseases of Infants and Children, we should give more attention to the anatomical peculiarities of early life than is usual with most of us. I believe it is very profitable for medical students to give them practical demonstrations on the cadaver, and the advanced student should be required to make dissections. In my college course, I give demonstrations on the gross anatomy, making the dissections before the class as we proceed.

The large size and advanced development of the head and upper extremities as compared with the pelvis and lower extremities, is a very striking anatomical peculiarity of the infant at birth—due, of course, to the fact that in the foetal circulation the blood that circulates to the head and upper extremities is richer than that which supplies the lower parts of the body. That is, the arterialized blood as it passes to the head, has not as large a percent of venous blood mixed with it as that which supplies the lower parts of the body.

---

*Read at the Second Annual Meeting of the American Association of Teachers of the Diseases of Children, Chicago, Ill., June 1, 1908.

In proportion to the size and weight, there is a large amount of fat deposited under the skin, especially noticeable upon the trunk and limbs, giving the baby the plump and rotund appearance that is so characteristic of a well nourished infant. This fat being a poor conductor of heat and cold, serves a valuable purpose evidently, by preventing what would otherwise be a severe shock to the infant at birth, by the action of the cool atmosphere as it suddenly emerges from its hot bed of water in utero into the external world. This fat may also serve as nutriment for the infant. It can be taken up by re-absorption and thus aid in sustaining life until the mother's milk appears.

The head and face of the infant have several peculiarities worthy of note. The bones which form the face and base of the skull, are firmer, and have a richer deposit of lime salt, at this period than any other bones in the skeleton. The bones forming the cranial case, especially the frontal, parietal and occipital bones, are quite thin and elastic, and the sutures are ununited except by membranes. These conditions appear to have been designed by nature. The solid floor of the cranial case prevents distortion during the exigencies of labor, thus preventing pressure upon the nerves and blood vessels that pass through the several foramina, and the pliability of the skull bones above facilitate parturition.

The short appearance of the face, out of proportion to that of childhood, is due, of course, to the yet imperfectly developed maxillary bones and absence of teeth. The skin of the scalp is thicker than in any other part of the body, due to the presence of the hair follicles and the deposit of more or less fat. There is greater mobility of the scalp at this period than later in life.

The neck of the infant appears proportionately very short,—the head seeming to rest upon the shoulders. This is due to the undeveloped face and the abundant deposit of subcutaneous fat in that region. On opening the neck in front, there are two striking anatomical peculiarities, viz.: the very short undeveloped larynx, and the large size of the thyroid gland—the thyroid at birth being more than half the average size of that of the adult thyroid. The larynx is apparently high up under the lower jaw, and the thyroid bone is so high up that it is with difficulty that it can be felt. The cricoid cartilage can be fairly well made out by palpation, but to feel it, the head must be drawn sharply backward, and then the cricoid is found just above the sternum.

On account of the conditions above referred to and the great vascularity of this region, particularly the large veins which form a plexus in the cellular tissue lying in front of the trachae—which veins—the inferior thyroids and their tributaries having numerous communicating branches which anastomose freely across the median line, make it exceedingly difficult to do a tracheotomy in an infant. These veins are decidedly more distended with blood when there is obstructed breathing, as in laryngeal diphtheria, thus greatly increasing the difficulty and danger of surgery of the trachea in the young.

The thorax of the infant is short and broad. It has less of the "barrel" shape and is rather more the shape of a shallow tub. The ribs are not so decidedly hoop shaped, and the cartilages and sternum present rather a flattened surface in front. On opening the thorax, the relatively large size of the pericardial sac is apparent and the limited view of the anterior margins of the lungs is very different from what we are familiar with in the adult thorax.

The most remarkable peculiarity observed in the infant thorax is the great size of the thymus-gland. It occupies about one-third of the upper segment of the thorax, extending downward as low as the fourth costal cartilage, and upward into the neck above the top of the sternum. The thymus gland in its gross appearance resembles the thyroid gland, and like the thyroid it is a ductless gland. The thymus gland is a temporary organ. It continues to grow until about the end of the second year. It then gradually dwindles, and at puberty, it is a mere trace of fibrous like tissue. The office of the thymus gland is not fully understood. Some physiologists believe is to be one source of the colored blood corpuscles. This gland, like the thyroid has a rich supply of blood. The arteries supplying the thymus are derived from the internal mammaries and the superior and inferior thyroid arteries. The veins terminate in the left innominate vein and the thyroid veins. There are a number of large lymphatic glands in the substance of the thymus gland.

When we remember the size and consistency of the thymus gland, its presence must be taken into consideration in making physical examinations of the chest in young children. Percussion in the upper third of the thorax anteriorly will give dullness necessarily, and, the examiner may be lead to suspect solidification of the lung, if he forgets the presence of the thymus.

The pleurae have no special features in the infant, excepting that they are thicker on the parietal layer, and they extend lower down posteriorly than in the adult. If the plural sac be blown up with air, they will be found to extend down to the point where the 12th rib articulates with the vertebra on the right side; and as low down as the transverse process of the first lumbar vertebra on the left side. This should be borne in mind in operating upon the kidney.

The lungs in the infant differ but little from that of the adult, except in the matter of size. They are much lighter in color, they get mottled and darker as age advances. The apices of the lungs extend well up into the neck above the clavicles and behind the subclavian arteries. Owing to the chest walls being so much thinner than those of adults, the vesicular and bronchial sounds are more clearly heard on auscultation.

The heart for the first few months is relatively much larger than that in the adult and it is nearly in the perpendicular position. In some cases the foramen ovale remains slightly open for several months, allowing a small amount of blood to pass through, from one auricle to the other, causing a slight murmur, which may be heard on careful auscultation. Complete closure of the foramen ovale occurs ordinarily about the end of the sixth week.

The relatively large heart enclosed in the pericardial sac occupies a large space in the central part of the infant's thorax, and in physical examinations due allowance must be made.

The abdomen presents several peculiarities on its external surface. It is more rotund, and proportionately much larger than that of the adult. This is due to the constant presence of a considerable amount of gas in the intestines and the great size of the liver and the relatively small size of the pelvis. The bladder, when distended, is high up in the abdomen, the fundus being about midway between the pubis and umbilicus.

On opening the abdominal cavity, the relatively great size of the liver is most striking. The weight of the liver in a well nourished infant is equal to about one-fifteenth of the weight of the child.

The abundant supply of arterial blood brought directly to the liver from the umbilical vein in the foetal circulation, explains the advanced development of that organ at birth. The secretory functions of the liver begin long before full term. It is, apparent, therefore, that the elaboration of bile is an essential factor in foetal development. The position of the ductus-venosus, (the continuation of the umbilical vein on its way to the ascending vena cava,) lying as it does in the longitudinal fissure of the liver, explains how that the blood which remains in this vessel for several days after ligation of the umbilical cord will, by absorption, take up some of the coloring matter of the bile, and thus distribute it throughout the circulation, causing the jaundice that is so commonly observed in the new born infant.

The high position of the bladder above referred to, is due to the fact that in the early period of foetal development, the apex of the bladder was a prolonged canal extending through the umbilical opening into the allantois. The urachus, which is the suspensory ligament of the bladder, is the obliterated extended bladder canal. It occasionally occurs that the urachus remains a patulous canal extending up into the umbilical cicatrix and thus may become a urinary fistula. I have under my observation a girl now twelve years old who has such a urinary fistula.

The spleen in infancy has no special features worthy of attention. It varies in size, according to the nutrition of the individual, as it does in the adult. Its relative size and position is about the same as in adults. The same may be said of the pancreas.

The stomach and intestines in infancy are fairly well developed, and not out of proportion to the size and weight of the body. The statement that the stomach is in an almost vertical position, according to several text books on anatomy, is not true in every case, especially if the stomach be much distended. If the stomach be blown up with air, it assumes the nearly horizontal position as it does in the adult. Its relations anatomically are, of course, the same as that in the adult.

The small intestines occupy the same general position as in the adult. The ileum occupies mostly the right iliac fossa and has greater breadth of mesentery and therefore greater mobility. It is this part of the bowel that is most frequently involved in hernia. The large intestine is usually found more or less distended with gas, and can be fairly well traced by surface markings.

The caecum with the appendix vermiformis occupies the right iliac fossa, or rather a little above the fossa, and the appendix even in infants may be the seat of inflammation. The sigmoid flexure of the colon makes a much larger detour in the left inguinal region, relatively, than it does in the adult. It usually extends across almost over to the right iliac fossa. The relatively shallow pelvis makes the rectum appear to be much higher in the abdomen than in adults.

The mesentery in the infant has very little fat deposited between its layers. The same is true of the omentum, whereas in the adult there is usually much fat in these structures.

The kidneys at birth are lobulated like those of the cow. The lobules are the Malpighian pyramids, outlined on the surface of the kidney. This lobulated appearance disappears about the close of the first year.

The organs of generation are rather large relatively, especially is this true of the female organs. The uterus at birth will average one inch in length and its breadth and thickness are in the same proportion. The length of the adult uterus is put down as three inches.

There are a number of other interesting anatomical peculiarities that we might mention, but time forbids.

Classification of City Milk.—Dr. Melvin of Washington, D. C., has recently recommended that city milk should be divided into three commercial classes, and sold as such as follows:

Class 1. Certified milk, which must be produced and kept under certain conditions, including the tuberculin test and veterinary examination of cows, and must answer to certain specifications concerning a low bacteria content not exceeding 10,000 per c. c. These dairies and their products are subjected to frequent inspection, the milk to be certified to by the health officer of the city. Such milk would presumably be prescribed by physicians for infants and invalids and be used by those who are willing to pay a little more for it.

Class 2. Inspected milk is to be produced and kept under certain specified conditions, including the tuberculin test, veterinary examination of cows, and a bacteria content not exceeding 100,000 per c. c.

Class 3. Pasteurized milk. All milk from dairies not able to comply with the specifications for Classes 1 and 2 is to be pasteurized, sold as pasteurized, and kept under specified conditions, before and after pasteurization. Cows producing this milk must be examined by a veterinarian, and any cow affected with a disease communicable to the human, or otherwise unfit for milk production, is excluded from the dairy where Class 3 milk is produced. Cows showing physical symptoms of tuberculosis would be barred. Cows responding to a tuberculin test, but not showing physical symptoms, would be allowed to remain in the dairy and supply milk for this class. Dr. Melvin proposed that Class 3 milk should be pasteurized at a central plant under official inspection.

AMERICAN PEDIATRIC SOCIETY.

(Continued from page 638).

A PLAN FOR DEALING WITH ATROPIC INFANTS. —Henry Dwight Chapin of New York read this paper. He said that the usual form of dealing with the sick and ailing children of the poor for their relief, consisted in attendance at dispensaries, day nurseries, visits of district physicians or nurses from the dispensaries and settlements, fresh air excursions, etc., but there was one disheartening feature that occasionally confronted the work, and that was the wretched environment that they found surrounding them when they returned to their homes. The Speedwell Society was inaugurated in 1902. Cases had been placed in carefully selected farms near Morristown, N. J. A doctor and trained nurse had constant oversight of the cases. The foster mother was instructed in the feeding and care of the cases.

The supervisor nurse procured the children from the city and returned them to their homes. She also saw that the improved methods of caring for and feeding the infants were carried on after the child had been returned home. The total number of children cared for since the Speedwell Society was inaugurated was 817. Briefly summarizing a plan that had worked well and which was advised in the future dealing with neglected infants suffering from marasmus he offered the following: (1) Boarding out in a selected area of the country noted for its healthy conditions. (2) Constant attention to hygiene and diet on the part of the doctor and nurse who were familiar with that class of cases and competent to deal with them. (3) Infants were kept as long as necessary until feeding was regular and digestion and assimilation were improved sufficiently to result in an increase in weight. (4) To train up in a good neighborhood a number of foster mothers who, by taking these infants into their homes, become experts in handling them and were far superior to those offered by the best of institutions.

THE NEED OF POST-GRADUATE INSTRUCTION IN PEDIATRICS.—Dr. Augustus Caille of New York said that during twenty years as a teacher in pediatrics he had not met a single young hospital graduate, other than an externe of a children's hospital who did not admit on inquiry his lack of knowledge regarding the line of professional work which made up one-half the practice of the family physician. Therefore it was evident that the present facilities for acquiring the knowledge necessary in this branch of medicine were wholly inadequate and that more practical instruction along the line indicated was urgently needed.

MODERN LABORATORY FEEDING AND THE WIDE RANGE OF RESOURCES WHICH IT PROVIDES.—Dr. Thomas Morgan Rotch of Boston said that what he wished to present was the result of his seventeen years of study which had been made in modern laboratory methods. He pointed out that the resources of the milk laboratories were such that physicians could prescribe combinations of any known food stuffs. Following out this idea he explained that it was no longer necessary to feed an infant with a patent or proprietary food because that food seemed to agree best with an individual with a weak digestion. Careful chemical analysis had now made them familiar with the food combinations of all the patent and proprietary foods. Therefore it was now possible to make exactly the same combinations as they appeared in these patent foods at the laboratories. The prescriptions of these compounds of food could be written for in percentages. Of special importance, next to the work of separated proteids, whey and casein, was the possibility of prescribing the carbohydrates to a much wider extent than ever before. He explained why and how maltose was preferably used instead of lactose in cases where there was an over-production of lactic acid, and how, on the contrary, where there was an over-production of butyric acid, lactose was preferable to maltose. He showed how it was really not necessary to make use of the mechanical action of the starches in making the casein precipitate final, since the divided proteid accomplished this much better and much more intelligently. He explained also how the supposed value of a well known patent food, whose chief ingredient was maltose, could be obtained on a laboratory prescription by simply prescribing dextrinized starch, and thus obtaining besides maltose a residue which corresponded to that in the above mentioned food, in both cases the residue being what was claimed for the food regarding its laxative properties. It was a mistake to think that centrifugal cream must necessarily be used in the laboratory prescriptions, and that, on the contrary, the laboratory was always willing to make up the prescribed fat combinations from gravity cream when called for.

One of the greatest advances which had been made this last year in regard to the possibilities of laboratory modifications, when the physician wished to use laboratory methods, was the use of lactic acid or the lactic acid bacillus in pure culture. A strain of the lactic acid bacillus had now been obtained and was kept in the laboratories which was seemingly successful in killing out the special ferment which produced the fermentative diarrhoeas. The physician could now prescribe a pure culture of the lactic acid bacillus in cases of this kind and its use had been followed by the greatest success.

TUESDAY AFTERNOON SESSION.

DISCUSSION OF DR. ROTCH'S PAPER.

Dr. L. Emmett Holt said that he and Dr. Clark were working along this line. They had made an experiment to determine the effect of lime water upon the gastric secretion. He used plain milk diluted with water, with lime water, and with soda. The chief effect of the lime water seemed to be the enormous increase in the production of HCl. In none of their experiments had they found a deficiency of pepsin in an infant's stomach, but they had found a great variation in the amount of HCl. The contents of the stomach were removed a half hour after the child was fed and these fluids were set aside in a test tube to see what further digestion would take place. The process soon came to a rest but when more HCl was added it went on again.

This showed that the problem was to increase the amount of HCl. This was probably the chief function of lime water.

Dr. Henry D. Chapin of New York said that he had written papers with the same object in view that Dr. Rotch had, namely: recognizing that proprietary foods sometimes did good, he wished to find if physicians could not utilize them in a scientific way. He believed the whole subject of infant feeding should be approached from a biological standpoint and not from the chemical. One must understand the intestinal tract of various animals; milks were in no sense interchangeable. Milks had a double function, developmental as well as nutritive; the developmental had been ignored.

Dr. Augustus Caille of New York said the subject was difficult because if the chemist put water, nitrate of silver and chloride of sodium in a test tube he knew definitely what the end results would be. But supposing the intestinal tract to be the test tube you put in your foods but the secretions were not always the same and secretions in motion were different from secretions at rest; so how could we tell what the end results would be? But again suppose the intestinal tract to be invaded by bacteria and the problem became still more complicated.

Dr. J. P. Crozer Griffith of Philadelphia said that Dr. Caille's remarks had encouraged him to say that he sometimes wondered if we were not blind leaders of the blind. Most of those present were teachers and he wondered how one could teach this subject so that the student could comprehend it; so that it would not discourage the student. He wondered if an elaborate scheme for laboratory feeding would not discourage them and if they would not abandon it.

Dr. Wm. P. Northrup of New York said that they had scarcely mentioned milk in the talk of feeding. One of the greatest triumphs of the laboratory to his mind was milk; they had been given an object lesson in the production of pure milk with a known fat content of unvarying degree.

Dr. A. Jacobi said that he did not recognize the difference that had been claimed for biology and chemistry. He recognized no boundary line between them or else we would not have biological chemistry.

Dr. Henry D. Chapin said that he did not intend to put biology against chemistry.

Dr. A. Jacobi said that there was no man in America that had done more original work on these points than Dr. Rotch. There were two classes of men among us; those with original minds and those with critical minds; most had the critical mind, but all had the same purpose in view.

Dr. Thomas Morgan Rotch of Boston, in closing the discussion, said that the discussion had shown that they were all interested in the subject and were working in the same direction. He thought that Dr. Chapin was right in what he said, but he was not working in one line alone. He was not working for students, but to find the best instruments to work with. He was taking the combined knowledge on the subject. He thought that Dr. Southworth had given us the most advanced teaching on alkalinity. Dr. Dunn could show case after case where lactic acid feeding had not been unavailing. He did not ignore the biological side of the subject that was being studied but that was not his line. Dr. Rotch thought there were many men who were using laboratory methods of feeding and he thought that no one should throw cold water upon these investigations.

AN INQUIRY INTO THE STATUS OF THE KINDERGARTEN.—Dr. Isaac Abt of Chicago had written a letter to physicians, mothers and teachers asking certain questions in regard to their opinion of the kindergarten and his paper consisted in a summary of the answers received. He had made these inquiries simply for information and was entirely unprejudiced himself. He found that of the physicians who replied 55.46 per cent. were in favor of the kindergarten and 21 per cent. were opposed to it. There were 23.50 per cent. who were indifferent. The replies from the mothers showed that 61.47 per cent. were in favor of the kindergarten and 22.87 were indifferent to it. The replies from superintendents and principals showed that 74.41 per cent. were in favor, while 11.64 per cent. were opposed.

to kindergartens. Of the kindergartners themselves 96.15 per cent. approved of the kindergarten. The chief objection to the kindergarten seemed to be from the physical standpoint; some thought that greater liability to contagious diseases and pulmonary affections existed. The results as a whole were disappointing, but Dr. Abt thought it a question upon which the physician should be informed as he was often called upon to advise parents upon this matter.

DISCUSSION OF DR. ABT'S PAPER.

Dr. Thomas Morgan Rotch of Boston said that he thought we might in the future do much toward securing the proper management of the kindergarten. Children should not be classified by their chronological age but by their special development. Some children of five did not have the development of others of three and a half or four.

Dr. William P. Northrup of New York said that while we were all so much interested in infant mortality it would be well to look after the children a little older. A few days since a child of six had written him a nicely written note. We ought to take more interest in preserving these children while they were growing up.

Dr. F. S. Churchill of Chicago said he thought mothers and medical men often had a wrong idea in regard to the kindergarten. The well regulated kindergarten simply tried to steer the mental development of the child. There was unfortunately only about one kindergartner in a hundred that grasped the idea. The teachers should be a high class of women and well paid. The mother was not necessarily the best trainer of the child; the professional was better than the amateur. Dr. Churchill said that personally he believed in the kindergarten.

Dr. Henry D. Chapin of New York agreed with what had been said in regard to the need for teachers of a higher status. The whole public school system was radically wrong, the teachers being graded according to the size of the pupils they taught. The early age was the critical time and yet at the time the children had the less experienced teachers. This fact should be brought to the attention of legislators.

Dr. Charles G. Kerley of New York said that the question rested entirely with the surroundings of the child. If the child could have outdoor life and proper surroundings at home, that was by far the best place for him, but to city children reared in squalor and dirt the kindergarten was a Godsend; they were taught how to play, the necessity of keeping clean and the rudiments of living.

THE HARD CURDS OF INFANT'S STOOLS; THEIR ORIGIN, NATURE, AND TRANSFORMATION.—Dr. Thomas S. Southworth and Dr. O. M. Schloss of New York presented this communication which was read by Dr. Southworth. The discovery that firm rounded curds occurring not infrequently in the stools of infants fed upon cow's milk were composed in part of fatty acids and soaps had led to considerable discussion and warranted a further inquiry into the origin of such bodies in the digestive tract, and their subsequent transformation during their passage through the digestive tract. Although certain theoretical and clinical grounds for considering such masses found in the stools to be identical in origin with those found in the vomited matter seemed reasonable and conclusive, a series of observations and tests was instituted at the Nursery and Child's Hospital to definitely settle some disputed claims. Foremost among these was the claim that the masses in the stools contained no proteid and only fatty acids and soaps. Typically firm curds occurring in seventy-five stools were passed by thirty-eight infants and subjected to qualitative and chemical tests to determine the presence of proteid, soaps, fatty acids, and neutral fat in those masses. The hard curds were found to consist mainly of fatty acids and protein in varying amounts although they uniformly showed the presence of neutral fat by stain reactions. Soluble soaps were found to be present but apparently in smaller amounts than usually assumed. In every instance the final residue of the masses responded to all four of the tests for protein. The hardness depended upon the relative amount of proteid, soaps, fatty acids or neutral fat present.

DISCUSSION OF DR. SOUTHWORTH'S PAPER.

Dr. Isaac Abt of Chicago said that the Berlin and Breslau schools would have it believed that there was no such thing as proteid indigestion, but now they said that the trouble was entirely due to fats. He had fed babies that suffered from what was presumed to be fat indigestion on perfectly fat free milk and found that there was in the stools a curd that resembled that described by Dr. Southworth. These curds must have consisted of some undigested proteid. He thought this line of investigation was of great importance.

Dr. J. Lovett Morse of Boston said that he and his assistant, Dr. Talbot, had been at work on this question and had worked the thing out quantitatively as well as qualitatively. They had found that every time the basis of these curds was a proteid, the fat was merely caught in the meshes. This was not only a fact in the stools of the babies but was true in artificially digested milk. The amount of fat varied with the amount of fat in the milk. The greater part of the fat in the curds was in the form of neutral fat. The small curds about the size of a shot were composed almost entirely of soaps. The reaction depended upon the relation of the proteid and fat in the original food. He found these large curds in babies that were taking barley water mixtures.

Dr. S. M. Hamil of Philadelphia said that in a case suffering from mild intestinal disturbance he had tried dextrinized food and within three days the child began to pass curds which had very much the appearance of those described by the writer of the paper. He experimented with the dextrinized foods, applying varying dilutions of HCl, to milk, to milk and gruel and to milk mixtures containing gruel. He invariably got a curd that was indestructible. The relationship of the gruel to the curd was so evident that the gruel was immediately stopped and the curds promptly disappeared. The cause of this was due to some defect in the secretions. They were evidently conditions in which gruels defeated the purpose for which they were given.

Dr. Northrup asked if the feedings were 5% alkaline.

Dr. Hamil replied that they were.

Dr. Charles G. Kerley of New York said that he had used gruels in feeding for a long time but by their use had never been able to get a higher percentage of proteid in these cases of proteid incapacity.

He gave them because of the additional nutriment that they furnished.

Dr. Thomas Southworth of New York, in closing the discussion said that he thought it was due to the writings of Czerny and Hellar that there had been this doubt in regard to the composition of the curds and he was glad that Dr. Morse's investigations had substantiated theirs.

FAT AND PROTEID CONTENT OF TOP MILK.—Dr. Charles A. Fife of Philadelphia read this paper. The Chapin dipper had been used in obtaining the top milk and the results epitomized were shown by charts. The fats in the top quarts showed the highest to be 32.2 per cent. while the lowest was 17.8 per cent. In milks of lower grades the variation was much less. In milks of higher grades the variation was much greater. The proteids were very uniform throughout, but in the higher grades the proportion of proteids was much less than was usually believed, about 2.75 per cent. As to variations between pints and quarts, the quarts were more uniform, as a rule, than the pints and usually about one-half per cent. higher. With regard to the composition of the bottom milk there was very little difference between the lower twenty-four ounces and the lower eight ounces so that it was not necessary to depend on the lower eight ounces to get a so-called fat-free milk. There was very little difference as to proteid.

Wednesday Evening Session.

DISCUSSION OF DR. FIFE'S PAPER.

Dr. J. P. Crozer Griffith asked if this certified milk was supposed to be 4 or 5%.

Dr. Fife said that the charts represented only 4% milks. He had determined the 5% milks also.

Dr. Griffith said that it was perplexing to know the strength of top milk. Of course we knew that it must have a considerable variation. He had been in the habit of using the lower eight ounces for a fat free milk; he was glad to know that this was not necessary.

Dr. Chapin of New York said that in the assays that he had made there had been but little difference in the fat content of the top nine ounces. The error was reduced by dilution so that it became a negligible quantity. His experience in assaying each ounce showed that there was quite a variation as one went down, but if one took all the cream and all the skim milk the error was not great.

Dr. Thomas S. Southworth of New York said that he thought the term " top milks" should be limited to any mixture which was taken by removing all the cream and a portion of the milk. That was the only way to make a distinction between creams and top milks.

Dr. Green asked if any analyses had been made with the object of determining if there was any difference between the different layers of the under milk. For a fat free milk he used the so-called "mid-milk."

Dr. Fife said that the variation of the lower mixtures was very slight. He had done work on the different types of proteids and some which seemed to show that the lower the milk the more dense the casein.

THE URINARY FINDINGS IN A SERIES OF INFANTS SUFFERING FROM INTESTINAL INFECTION.—Dr. J. H. Mason Knox and Dr. J. C. Meakins of Baltimore said that they had taken seventy-two infants as a basis for this study, of which nineteen were used as controls, in whom the urinary findings were negative and in whom there was no intestinal infection. There were six cases of malnutrition, six cases of diarrhoea, four cases of indigestion, fifty-three cases of definite intestinal infection. No urinary changes were found in thirty-one of the fifty-three; in thirty-two definite abnormalities had been found. More than one-half of these fifty-three were in the middle of the first year. The duration of illness ranged about ten days to six weeks. There were thirty-four boys and nineteen girls. They made three classes of cases according to the urinary findings: (1) Those containing onyl albumin, or albumin and casts. (2) Those containing pus. (3) Those in which in addition to pus there were albumin, casts, bacteria and red cells. They concluded that infection in the urine occurred almost as frequently where the cases were toxic as where there was very definite intestinal lesion, and that infection had its origin in the intestinal canal and reached the kidneys secondarily.

Dr. Isaac Abt of Chicago said that if we would accept the explanation of Frankenstein that most of these intestinal lesions were indications of perversion of metabolism with the production of toxic substances much the same as certain constitutional diseases produced different types of acidosis, it might help us to an understanding of this subject. Founder thought these lesions might have their pathological explanation by the Erlich side-chain theory. This might explain why the gastro-intestinal lesions were insignificant in comparison with the severe toxaemia met with.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 30 West 33rd St., New York.
Telephone, 781 Madison.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.

COLLABORATORS.

William J. Butler, M. D., Chicago, Ill.
Henry L. Coit, M. D., Newark, N. J.
Alfred C. Cotton, M. D., Albany, N. Y.
Theodore J. Elterich, M. D., Pittsburg, Pa.
LeGrand Kerr, M. D., Brooklyn, N. Y.
Walter G. Murphy, M. D., Hartford. Conn.
Meyer L. Rhein, M. D., D. D. S., New York, N. Y.
J. Ross Snyder, M. D., Birmingham, Ala.
Henry Enos Tuley, M. D., Louisville, Ky.
Charlton Wallace, M. D., New York, N. Y.
William W. Butterworth, M. D., New Orleans, La.
Thos. D. Coleman, M. D., Augusta, Ga.
Charles Douglas, M. D., Detroit, Mich.
William C. Hollopeter, M. D., Philadelphia, Pa.
H. M. McClanahan, M. D., Omaha, Neb.
John B. Rae, M. D., New York, N. Y.
Henry L. K. Shaw, M. D., Albany, N. Y.
Parker Syms, M. D., New York, N. Y.
James W. Van Derslice, M. D., Chicago, Ill.
George M. Wells, M. D., Portland, Ore.

EDITORIAL.

CHRONOLOGIC AND ANATOMIC AGE IN EARLY LIFE.

Dr. Thomas Morgan Rotch, professor of Pediatrics in Harvard University, in the Journal of the American Medical Association of October 10th, has contributed under the above title the results of his investigations which appear epochal.

The questions arising as to child labor, school work and athletics have previously been decided by the years of life the child has passed; Crampton's demonstrations of the varying ages at which puberty is reached proved the fallaciousness of the chronologic. A study of one thousand elementary-school boys at the age of from ten to fifteen years evidenced that the chronologic age had little to do with the eruption of teeth. Rotch's studies were made with about two hundred children ordinarily considered normal; the general examination of such included—mentality; appetite and general functions; previous history of disease; weight and height; time of sitting and standing alone; commencement of catamenia and succeeding regularity and intervals; development of breasts; circumference of head; closure of fontanelles; first dentition; the chronologic regularity and irregularity of the temporary teeth eruption as well as of the second dentition. Roentgenographs at the close of this examination of presumably normal children were taken of the carpal bones on the findings of Dr. A. W. George, Roentgenologist, "that the most practical and reliable index of development was represented by the hand and wrist."

Dr. Rotch has classified his groups under letters with no reference to age by years but by the anatomic findings; we quote him: "In making up the alphabetical groups I have arbitrarily assumed that the carpal bones and the lower epiphyses of the radius and ulna, according as they develop early or late, can represent each alphabetical division. I have also assumed that none of these bones are normally present at birth. Also assuming that the os magnum and unciform bones appear in the first year, I have placed the groups under A. Under B, I have grouped those hands which show the presence of the lower epiphysis of th radius in addition to the bones present in Group A; under C, those which show the presence of the cuneiform bones in addition to those in common with A and B. The heads of the metacarpal bones and the epiphyses of the first phalanges at this period can be used as controls of this Group C. Still under these arbitrary divisions I have continued to place groups which successively show the presence of the semi-lunar and trapezium bones, with the second and fourth terminal phalanges as controls of this group and have then introduced as additional groups those which show the scaphoid, the trapezoid, the lower epiphyses of the ulna and the pisiform bones." * * * "It is fortunate that the carpal bones and the lower epiphyses of the radius and ulna furnish a progressive series of anatomic development year by year, so that only in unusual cases will it be necessary to refer to the epiphyses of the skeleton for corroboration."

In making this classification, which Dr. Rotch calls arbitrary, he notes the possibility of further studies varying same; indeed, his findings are contrary to English, French and German anatomies as to the appearances of some epiphyses.

He further asks that all our physiologic knowledge be used with these anatomic findings in deciding the questions of early age. His appeal that these questions must not be settled by pedagogues but by physicians, if fully brought to the great mass of the people would bring a sleeping force into action that would disturb the existing condition of things mightily. The thoughtful man is brought to the conclusion in studying the multi-varied curriculum of our public schools, which keeps children of tender years, and more tender bones at home after school hours, endeavoring to store away in the brain a mass of uncorrelated, illogically acquired knowledge, that our Board of Education are either asleep or know not their work and in any case led by pedagogues gone mad with too much power.

The relevance of this work to athletics and child labor needs no amplification; the simplicity and speed of examination by the Roentgen ray and the importance of these two vital questions speak for themselves. New labor laws will have to be enacted to bring such a test into active operation.

ABSTRACTS

Bacteriology of Whooping-cough.—Alberico (Il Morgagni, January, 1908), after referring to the research of others, describes a diplococcus which he found constantly in 60 cases of pertussis, and which he believes is the specific organism in this disease. The diplococcus, collected from the sputa of the children, consists of two almost spherical (very rarely elongated) elements enclosed in an oval capsule. Sometimes the diplococci form chains of six or eight elements, and in this case the single capsules seem fused into one. The cocci are usually of the same size, about 0.8 m. in diameter. They stain fairly well with fuchsin, but best of all with the Ziehl stain. Pure cultures were obtained in broth after forty-eight hours at 22° to 24° C. The author found this organism most readily during the height of the pertussis epidemic, and as this waned so the diplococci became scarcer. In one case of purulent otitis in a child of 15 months, suffering from whooping-cough, the author found the organism in question in the aural discharge. Whether this diplococcus is the same as that described by Vincenzi and Litres is uncertain, but in any case the author feels fairly confident that the organism found by him is the specific cause of pertussis.—British Med. Journal, Aug. 22, 1908.

Children's Hospital in London.—The Hospital for Sick Children, Great Ormond Street, W. C. (Medical School recognized by the University of London for the Study of Children's Diseases), contains 222 beds, divided into 87 medical, 97 surgical and 38 for special and infectious cases, besides 38 beds at the Convalescent Branch, Highgate. The hospital having been recognized by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. Appointments are made every three months to eight medical clerkships and eight surgical clerkships, which are open to students at the hospital. Lectures or demonstrations, given once or twice every week during both winter and summer sessions, are open, free of charge, to medical practitioners. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 3 guineas; perpetual ticket, 5 guineas. A reduction of 2 guineas is made in the case of clinical clerks and dressers. Certificates of attendance granted. Prospectuses and further information will be forwarded on application to the dean at the hospital.

Paddington Green Children's Hospital.—Number of beds, 46; average number of beds daily occupied, 35; average number of in-patients, 727; average number of out-patients, 18,206. Daily attendance of the medical and surgical staff. There are four clinical assistants. There is a convalescent home attached to the hospital at Fair View, Slough, with accommodation for 16 children in the winter and 24 in the summer months.

East London Hospital for Children, Shadwell.—The hospital contains 120 cots. Two house surgeons and two house physicians (holding office for six months) are appointed annually. This hospital is recognized by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year under the new regulations may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified. The practice of the hospital (in the out-patients' department) is open to students every day (except Saturdays), at such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments during the attendance of the physicians and surgeons. A certain number of clinical clerks and dressers are appointed every three months to each physician and surgeon. They are eligible for reappointment at the end of three months. Additional information may be obtained on applying to Mr. W. M. Wilcox, the secretary at the hospital.

The Queen's Hospital for Children, Hackney Road, Bethnal Green.—The hospital contains 130 beds. Patients in 1907: In-patients, 1,482 (536 under 2 years of age); out-patients, 26,525; new cases, 70,924 attendances. There are special dental, eye, skin, and Roentgen-ray departments. Particulars of facilities for attending medical and surgical practice can be obtained on application to the secretary.

The Belgrave Hospital for Children.—The hospital has accommodation for 40 children and a very extensive out-patient service. A very large number of infants under 12 months old are admitted. Medical and surgical out-patients are seen at 9 a. m. on Mondays, Tuesdays, Thursdays, and Fridays. Clinical assistants to the out-patient staff are appointed from time to time.

The Secretion of Pepsin in Infants.—J. Rosenstern has investigated the digestive power of the gastric secretion of infants in health and in diseased condition, and determined in the course of these experiments how far the presence of pepsin plays a part in the process (Berl. klin. Woch., March 16th, 1908). He details the technique of applying trial breakfasts to infants, and then gives the details of his actual observations. He found that the quantity of pepsin in the gastric secretion of healthy artificially fed infants increases as the infant grows older up to the end of three months, when it reaches a level at which it remains constant. Healthy breast-fed infants produce less pepsin than artificially-fed infants. The quantity of pepsin secreted into the stomach does not vary according to the state of nutrition of the infant, but is more or less constant for the age of the infant. However, when the food taken in decomposes in the gastric cavity, the quantity of pepsin is smaller than under normal conditions. The author is therefore forced to contradict the statement, which is often made, that the diminution of ferment in the stomachs of infants leads to definite symptoms or plays an etiological role in the affections of digestion in infants.—British Med. Journal, Aug. 8, 1908.

Goitre in the Newborn Infant.—Fabre and Thevenot (Lyon Médical, December 8th, 1907) have observed 9 cases of goitre in newborn infants, and, considering the small number of cases recorded, believe goitre to be of much more frequent occurrence in infancy than is commonly supposed. Heredity is important in etiology; the mother has almost always, and the father sometimes, been affected. In 2 cases of the 9, goitre was associated with inversion of viscera. Prolonged labor has been regarded as a cause of the occurrence, and may certainly cause a vascular goitre, the form least likely to be persistent. Clinically, two forms were observed—the benign form, which causes at most slight dyspnoea or raucous voice; and the grave form, which causes cyanosis and dyspnoea, sometimes severe enough to prevent the infant living for more than a few minutes. The situation of the tumor and its movement on deglutition should be enough to distinguish it from congenital cysts of the neck or from enlarged thymus gland. The latter distinction is most important, since cyanosis has been so often associated with enlarged thymus. If the tumor can be localized in the thyroid the outlook is hopeful, provided there be no delay in surgical interference. Exothyropexy is the operation of choice and gives marvellous results, especially in the vascular form.—British Med. Journal, Aug. 8, 1908.

Treatment of Hydrocephalus (Berliner klin. Wochens., No. 45, 1907).—FREUND, in the medical section of the Silesian Medical Society (Breslau), related the case of a child, at that time aged 15 months, in whom, when seven months old, an acute cerebral condition was observed in the course of a serous meningitis treated by lumbar puncture. Immediately following the subsidence of the acute symptoms an increase in the size of the skull came on, which during the next five months progressively increased three inches, so that at the age of one year the child's head measured twenty inches in circumference. This was treated by repeated lumbar puncture; there were four punctures in the course of a month and a half, and at each time 1½ to 3 oz. of fluid was removed. After the first puncture further increase in the size of the skull ceased and a considerable reduction in the circumference came on, and at that time, three and a half weeks after the last puncture, the skull measured only eighteen inches. The cranial sutures, which before were widely gaping, had come together; the fontanelle was reduced in size and no longer abnormally tense; the intra-cranial pressure seemed to have returned to the normal, and the exudative process was quite at a standstill. Freund had no doubt that this was a result of the lumber puncture, he remarked that though the circumference of the child's head was nearly normal it was exposed to two dangers: On the one hand, the possibility, in later life, of a return of the serous meningitis, and on the other hand, some affection of the motor or intellectual functions; the latter were fortunately normal in the case recorded.—British Journal of Children's Diseases, Sept., 1908.

Intestinal Lavages at a High Temperature in Entero-colitis of Young Infants (La Clin. Infant.,) April, 1908, p. 217.—CARAVASSILIS, of Athens, describes interesting details of his treatment by a rigorous diet and intestinal lavages at a high temperature according to the method adopted by Lesage, with the only difference that during the time of introducing the tube through the rectum into the cæcum and after its introduction, he does not hermetically close the anus with the finger, but lets the fluid escape freely by the side of the tube, which is withdrawn slowly before the fluid has completely flowed away. The duration of the lavage from beginning to end is about twenty-five minutes. Usually one lavage is given every twenty-four hours, rarely two, and then only when the illness cannot be otherwise controlled. The quantity of fluid for each lavage is about three litres. Of this, about a third is used at the moment of introducing the tube, one litre while it is stationary, and the remainder while it is being withdrawn. The temperature of the fluid is usually 40° to 43° C., and to make certain that it remains at the same level throughout the operation a thermometer is placed in the vessel and hot or cold water added according to requirement. The fluid consists of boiled water, rarely with salt added, or sometimes of very thin decoction of linseed. Of 38 infants attacked with entero-colitis, 27 were cured, 3 were benefited, and 8 died; in all these cases the hot lavages acted more or less effectually on the local symptoms. The colicky pains often yielded to the first lavage; the straining was definitely lessened, perhaps to reappear from four to twelve hours later, but rarely with the same degree of intensity, and they ceased after the fourth lavage; the stools also became rapidly modified. These lavages act with more efficacy when given at the commencement of the illness; the later the intervention the greater is the number required and the less their effect. In private practice the results obtained were better than in the clinic, due probably, to the younger age and unfavorable surroundings of the latter. The best temperature for the fluid seemed to be 40°-42° C. These lavages at high temperature, besides assuaging thirst, raising the vascular tension, steadying the pulse and giving strength to the infant, have the further advantage of checking hæmorrhage and facilitating the introduction of the tube by means of the great heat of the liquid, which overcomes obstacles due to tetanic contraction of the rectum.—British Journal of Children's Diseases, Sept., 1908.

Nephritis Due to Impetigo.—PROFESSOR HUTINEL observes that, in the case of children extensively affected with impetigo, it is far from unusual to find symptoms of nephritis; œdema of the feet and of the face, increase in the size of the liver, *râles* at the bases of the lungs, dilatation of the heart with irregular action and *bruit de galop,* small and frequent pulse, and albuminuria. Cardiac complications may supervene from staphylococcic and streptococcic infection, and the heart may also be burdened and distended by the œdema of the tissues, the functional failure of the skin, and the spasm of the vessels, toxic in origin.

The skin must be disinfected, and the scabs removed by means of moist dressings. Milk diet is better than dechloridized diet for treatment of the nephritis, and the heart may be stimulated by camphor in oil hypodermically.—Journal des Praticiens.

Carrot Soup in Infant Feeding.—The reigning controversy in regard to the amount of foodstuffs necessary and advisable for an adult shows how far our knowledge of nutrition is from being an exact science, and still more is this shown when the nutrition of infants is concerned. There are almost as many methods of artificial feeding as there are pediatrists, which certainly would not be the fact if we were sure of the first principles of nutrition. The advance in the so-called "percentage method of feeding," that is, in modifying the separate constituents of cow's milk according to the age and the individual peculiarities of an infant, has marked one great phase of progress in the latter direction. But modified cow's milk has proved to be no such universal food for infants as its enthusiastic advocates believed in the beginning, and indeed the latest observations have shown that many infants possess great intolerance to cow's milk, however modified, both in health and in disease. It is in such cases that the problem of feeding the child that may be failing in weight and in strength becomes very urgent indeed.

In the Münchener medizinische Wochenschrift for August 4, 1908, Dr. Moro of Pfaundler's clinic in Munich urges the use of specially prepared carrot soup for these patients. Infants suffering from acute gastrointestinal disorders, who were usually kept on a strict water diet for several days after the beginning of symptoms, were fed on the carrot soup immediately after the milk was stopped and the results were very gratifying. The symptoms of marked intoxication, the restlessness, the disturbances of consciousness, the changes in respiratory rhythm, the vomiting and the exhausting diarrhea were quickly subdued by such a diet. A rapid fall of temperature usually followed, and with it the weight curve of the infant again assumed an upward tendency, quickly making up for the loss in weight during the acute attack. After a few days, cow's milk could be given and the interrupted development of the child would again take its natural course. Infants suffering from chronic malnutrition and showing various marantic symptoms improved very markedly on the diet of carrot soup, the gain in weight following the control of the constant vomiting that was a frequent feature of these cases. Clinical observation showed that the retention of water was especially increased by the use of carrot soup and at same time the fairly high sugar content of the soup was easily borne by patients who could digest no sugar whatever in other preparations. The bacterial flora of the intestines seemed to be very markedly affected in most cases, the usual abundance of Gram-positive organisms present in cases of acute intoxication giving way to a prevalence of Gram-negative bacteria, the total number of organisms being, at the same time, remarkably diminished.

Moro thinks that patients suffering from acute intoxication, with great loss of fluids, and bottle-fed children with chronic malnutrition are best treated by this diet. The latter must never be used or continued with patients who show excessive retention of fluids as manifested by the appearance of edema. Carbohydrate intolerance is likewise not to be treated by the administration of carrot soup. These contraindications leave a vast number of cases in which the new diet may be tried, and such trial is certainly advisable on the strength of the results obtained in the Children's Clinic at Munich.—Med. Record, Oct. 3, 1908.

To Enhance the Efficacy of Diphtheria Antitoxin.—(Therapie der Gegenwart, Berlin), Krönig discusses the natural limitations of antitoxin treatment of diphtheria. The results depend on the proportion between the amount of the toxins circulating in the blood and the amount of antibodies introduced in the curative serum and whether the antibodies can obtain access to the toxins. He expresses amazement that so little attention has been paid hitherto to the distention of the swollen tissue with its stoppage of the capillaries, preventing the circulating of blood and lymph through the region. This principle is recognized and applied everywhere else, the physician relieving conditions in infiltrates in which the circulation has been more or less arrested by one or more incisions. The circulation is generally at once reestablished and necrosis and gangrene are warded off. This measure is particularly needed in diphtheria on account of its pronounced tendency to induce gangrene. In the diphtheric local process the toxin in the blood and the anti-bodies in the injected serum are unable to come into contact, and consequently the serum fails of its effect, while the products of the gangrenous process are absorbed and keep up the vicious circle. He makes a practice now of incising the diphtheric process in the throat when the fever does not subside after the injection of antitoxin and the diphtheric lesion in the throat remains hard and swollen. The incision generally bleeds very little; the more it bleeds the less obstruction in the capillaries. To promote the bleeding he applies warm compresses outside, and has the mouth rinsed with warm water to which a little mild antiseptic has been added. The procedure is but slightly painful, but the relief induced is frequently surprising, the temperature dropping at once, even although it has persisted high after one or two large injections. Since he has been systematically thus incising the hard swollen local process he has had much better results with antitoxin treatment. The number of gangrenous cases has been reduced to the minimum. These experiences confirm anew the necessity for injecting the serum at the earliest possible moment, while the vascular passages in the region of the local process are still open and unobstructed.

PUBLISHER'S ANNOUNCEMENT.

A NEW DIETETIC AND INJECTION METHOD OF TREATING TYPHOID FEVER, WITH A REPORT OF ONE HUNDRED AND THIRTY-EIGHT CONSECUTIVE CASES SUCCESSFULLY TREATED IN THE LAST TEN YEARS.

Under the above title Dr. F. J. W. Maguire of Detroit, contributes an interesting article to the July (1908) issue of the *Michigan State Medical Society Journal.* He bases his conclusions upon experience gained in the United States Marine Hospital service and in private practice. In part, he says: "I noticed when treating children with summer diarrhoea that shortly after giving them nitrogenous food in the form of milk or beef tea their temperature would always rise. I found that by giving these children a carbohydrate diet in the form of barley or rice water I rarely had a rise in temperature. With this observation in mind and remembering the results found in my autopsies following typhoid, I came to the conclusion that milk as a diet in typhoid fever should be eliminated. To further strengthen this theory I determined to carefully watch the results following the use of carbohydrate diet in the form of rice or barley water, etc. In eighteen cases I found the temperature rise following the milk diet, while there was no perceptible increase in temperature after taking rice or barley water.

"I need scarcely add that as a food in typhoid fever I have never since used milk. It is my practice, when I first see a typhoid fever case, to give plenty of sterile water by mouth for five to ten days or until the patient seems to require nourishment, then I use the peptonoids well diluted with sterile water, and the various flavored ices and gelatines. I condemned cow's milk, as it is a culture medium and the cause of a great deal of local irritation."

With reference to treatment the doctor states: "Having eliminated the milk diet with its terrible irritating effects in the already inflamed Peyer's patches, half the battle is won. This brings us to a consideration of the therapeutic aspect of this subject. In taking up the use of carbolic acid as the therapeutic agent in typhoid fever, I at first thought that I had discovered means whereby I could abort the disease. I commenced by giving half-dram doses of carbolic acid in a pint of sterile water as an enema. This I found very severe. The temperature would drop from 104 to subnormal and the patient showed signs of carbolic acid poisoning. The temperature would run from normal to 100 for a few hours, then resume its course. The kidneys were carefully watched in all these cases, as they are the filters by which the toxins are eliminated. In my next series of experiments I began with one drop of carbolic acid in a pint of sterile water given as an enema; if the temperature was not reduced I gave another enema in three hours with two drops, and so on increasing until I gave as high as ten drops or the tolerance of my patient allowed. My next series of experiments was with the drop method of injection. I mixed three to five drops of carbolic acid in a pint of sterile water, placed the solution in a fountain syringe alongside the bed and about a foot above the patient, and allowed about one hour for the solution to pass into the rectum. This was regulated by a gauge with a water-glass attachment which shows how fast the water drops. Through the reverse mucous currents this solution is carried throughout the intestinal tract and through this large area of absorption is carried to every tissue in the body."

In conclusion the author says: "I do not limit the use of carbolic acid injection to typhoid fever. I have met with phenomenal success with this mode of treatment in reducing temperature in pneumonia and gastritis and have carried cases of acute appendicitis to a sub-acute or chronic form, thereby lessening the danger from infection at the time of operation. In these 138 cases reported here today the ages ranged from three to seventy-eight years. I gave no cold baths, but applied ice bags over abdomen, and one bath a day for cleanliness. Occasionally I gave a little strychnine, quinine and salol as indicated. Since adopting this dietetic and carbolic injection method of treating typhoid fever, I have treated 138 consecutive cases. This covers a period of about ten years. All these cases responded readily to treatment, notwithstanding the fact that many were advanced before treatment was begun. Four cases had had most profuse hemorrhages, all of which subsided when the milk diet was removed. I believe by these experiments I have made some very valuable therapeutic and dietetic discoveries, and have sufficient confidence in my treatment that I am compiling a work on the subject."

BOOK REVIEWS.

A Practical Treatise on Therapeutics.—By Dr. Paul Le Gendre and Dr. August Broca. Second Edition. With a formulary and a posological table. Paris. G. Steinheil, publisher. 1908. Price 15 francs.

This is a French treatise covering both the medical and surgical therapeutics of early life.

Compared to our recent American books on Pediatrics, one is not favorably impressed. The authors have endeavored to present the treatment of each disease quite fully, and in so doing, have inserted discarded methods and remedies which are rather out of place on the same page with modern therapy.

The chapter on Infant Feeding describes many methods and substitute foods, but the principles are not elucidated and the student is left quite hopeless as to which to choose for a given case. The legume gruels are spoken of favorably and a vegetable bouillon is recommended after the diarrhaeal affections. The author says weight is augmented because of the rehydration of the tissues and the help of the chlorides in the vegetables. Dry vegetables are used by Comby. Buttermilk is spoken of very highly and is recommended to replace the bouillon if that does not agree. He adds that buttermilk should never replace milk. Malt soup is dextrinized with infusions of malt. The extracts are condemned as their diastatic action is too variable.

The surgical section does not recommend the extirpation of tuberculous glands, if they are not suppurating. Counter irritants and interstitial injections are advised. The tonsillotome is condemned, as it does not serve well in buried tonsils. An instrument known as the morecleur is considered far superior. Excision with the scalpel is also described. The illustrations are few and far between and are mainly line drawings. The arrangement in alphabetical order is of assistance for ready reference.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application.

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

PUBLISHER'S NOTICE.

LA GRIPPE—ACUTE CORYZA, BY W. T. MARRS, M. D., JEWETT, ILL.

What is the best method of aborting grippe or acute nasal catarrh? Several years ago a number of the leading medical men of the country were asked this question. The consensus of opinion was that the only appreciable way to shorten the duration is for the patient to go to bed and stay there until well. My observation prompts me to believe that sedation is more effective than stimulation. I can see no value in quinine. A vascular sedative, e. g., digitalis, aconite, does good. Calomel followed by a saline is very efficient at the beginning, Glyco-Thymoline in a 25 to 50 percent solution with water used with the K. & O. Nasal Douche allays the congested mucous membrane of the nose and throat. It is alkaline, antiseptic and sedative and always makes the patient feel more comfortable. When a more sedative action is desired I often put a little menthol with the solution. The patient should be instructed to keep the naso-pharyngeal mucous membrane in a clean aseptic condition as it is doubtless during colds that many cases of tubercular infection occur.

DEFECTIVE NUTRITION.

"In cases of defective nutrition, when pallor, loss of strength, and perhaps, emaciation occur, Cod-liver Oil is often of great service."

EMULSION CLOFTLIN

Palatable, dependable, efficient, contains the full nutritive value of fifty per cent purest Cod-liver Oil, combined with the tissue-salts Lime and Manganese and C. P. Glycerine.

℞ Emulsum Olei Morrhuae
(CLOFTLIN)

See—"New and Non-Official Remedies"—Page 44, 3rd Edition.

In all conditions needing the blood replenishing and nutrient virtues of the whole oil, it can be relied upon to do the work.

Samples and Literature Free.

THE CLOFTLIN CHEMICAL CO.,
75-77 Cliff Street, N. Y.

PEDIATRICS

Vol. XX DECEMBER, 1908 No. 12

ORIGINAL ARTICLES

OVERCOMING THE PREDISPOSITION TO TUBERCULOSIS AND THE DANGER FROM INFECTION DURING CHILDHOOD.*

By S. Adolphus Knopf, M. D.,
New York.

PROFESSOR OF PHTHISIO-THERAPY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ASSOCIATE DIRECTOR OF THE CLINIC FOR PULMONARY DISEASES OF THE HEALTH DEPARTMENT; VISITING PHYSICIAN TO THE RIVERSIDE SANATORIUM FOR CONSUMPTIVES OF THE CITY OF NEW YORK, ETC.

Mr. President, Ladies and Gentlemen:—

That there may be occasionally a direct bacillary transmission from the tuberculous parent to the child has been demonstrated sufficiently to permit of no further dispute. Yet the number of such cases is insignificant compared with the frequency with which a predisposition to tuberculosis in particular and to other diseases in general is transmitted to the offspring of a tuberculous mother or father. That this predisposition leads so frequently to a tuberculous disease can, of course, be easily accounted for by the many chances the child has of a post-natal infection as a result of the tuberculous environment it is forced to live in. The exposure to infection is, of course, greatest when the mother is tuberculous.

---

*Read before Section IV of the International Congress on Tuberculosis; "Tuberculosis in Children; Etiology, Prevention and Treatment," Prof. A. Jacobi, M. D., LL. D., President; Washington, D. C., Oct. 1, 1908. Published Simultaneously in Medical Record, New York.

In the second portion of this paper we will enter more fully into the details of exposure to post-natal infection during childhood. For the present we will devote our attention to overcoming the predisposition inherited from a tuberculous parent.

In what does this predisposition consist? It is a general enfeebled condition without a distinct pathological lesion, all the organs possessing perhaps less than the normal resisting power to the invasion of any disease. I believe the words physiological poverty are more than any others explicit of the condition of a child with a predisposition to tuberculosis and other diseases inherited from father or mother.

The child of a tuberculous mother, conceived and born while the mother is suffering with pulmonary tuberculosis in the advanced stages, has, of course, less chances for life and health than in cases where conception takes place in the incipient stage of the mother's disease. When both parents are tuberculous at the time of the conception of the child, the offspring is naturally more strongly predisposed to contracting tuberculosis. The predisposition is usually least marked in the earlier years of childhood when the mother was healthy and only the father tuberculous at the time of conception.

But whoever may be the tuberculous parent, father or mother, or whether the progenitors have been in the earlier or later stages of the disease, the overcoming of the predisposition to tuberculosis in infancy and childhood must begin with the child in utero. The mother who fears the transmission of a tuberculous predisposition to her child must throughout the child-bearing period live in the best possibly hygienic environment, in the purest air obtainable and, from the earliest recognition of her condition, refrain from the use of restricting garments She should breathe deeply and often, in fact, she should take regular breathing exercises until the desire for deep breathing becomes natural with her. The kind of breathing exercises which a pregnant woman can take without fear of harm in her condition, but which on the contrary will benefit her, are the following: She takes a deep inhalation and during this act raises her shoulders, rolls them backward and holds the breath for 3 to 5 seconds while in this position (See figure 9). Then she exhales while moving the shoulders forward and downward. This exercise which she can take from three to five times every half hour she should of course only practice in pure air, preferably near the open window or when outdoors.

While we will return to the subject of respiratory exercises later on, it might be interesting to note here the benefit which the lung of the mother of the future child will derive from deep breathing. Under ordinary conditions we never inhale or exhale more than about 500 c.c. of air which represents the tidal volume, or tidal air. When we inhale deeply, we are able to take in 1500 c.c. of air (complemental volume or complemental air), and about the equal amount of supplemental or reserved air can be expelled by making the expiratory exercises corresponding in effect to the inspiratory exercises. It must be evident that not only the respiratory, but also the circulatory, in fact the whole system, can be but benefited by such practice of deep breathing.

The living and the sleeping room of the pregnant woman should always be well ventilated and at least one window should be kept open in the bedroom even in cold weather. While it is hard to demonstrate that the fear so many people have of night air is indirectly responsible for a good deal of tuberculosis, I nevertheless believe this to be the case. Some people will sleep in a small bedroom, often several individuals together, with windows tightly closed, breathing the same air over and over again and thus surely poisoning themselves with the toxic products of their own exhalation and that of the other sleepers.

It is difficult to write on the subject of tuberculosis of childhood without touching upon the social problem. How can the pregnant woman, obliged to labor in a factory, or workship, often until the last few hours before her confinement, carry out the hygienic instructions just given which she should do in order to bear a child vigorous and strong with sufficient natural resisting power never to contract tuberculosis?

There should be a law prohibiting work in unsanitary, dusty and badly ventilated environments for all people, but particularly for women and children. The pregnant woman should be obliged to cease work in a factory or workshop two months before her confinement and not be permitted to re-enter until one month after her confinement and her complete restoration to health.

A typical description of such conditions where pregnant women work in factories until the very last moment can be found in Mr. John Spargo's book "The Bitter Cry of the Children." Unfortunately, poverty compels them not infrequently to adopt most pitiful means to hide their condition so that they may not be discharged. Perhaps they do not fear so much the few weeks of absence which their condition demands; what they mostly fear is permanent discharge—"losing the job"—and then being obliged to hunt for another. But as Mr. Spargo very tersely puts it, "The consequences are too serious alike to mother and child to justify legislative neglect."

That there is also a field for the exercise of the greatest humanitarian consideration on the part of the employer must be evident and the philanthropists who will create an institution destined to succur during a few months after childbirth any family depending also upon the mother's earning, can rest assured that many a life will thereby be saved. The newly born child is as much in need of pure air as the grown up person, and while in early infant life the system requires more warmth, the air the child is to breathe must be pure, free from dust and other impurities. The lying-in room and nursery should be well ventilated and their temperature well regulated. The atmosphere in such rooms should be warm enough but never be too hot or too dry.

As the young child grows, it should gradually become accustomed to cooler air. The habit of enveloping the child's face in a thick veil when it is taken out for an airing is absurd and if veiling is used at all, it should be thin, permitting the air to have access to the face. As the child grows up attention should be paid to its breathing. It should be noted whether it breathes through the nose as it should, or whether the nose seems obstructed and it breathes with open mouth. It must be remembered that mouth breathing in children is a predisposing cause to frequent colds, to bronchitis and similar affections, all of which in many instances must be considered forerunners of consumption. Mouth breathing in children is caused as a rule by certain growths in the throat (adenoid vegetation) and sometimes by enlarged tonsils, or by polypi in the nose. Besides the deleterious influence on the child's respiratory system, adenoid vegetation may also result in difficulty of hearing, consequent impairment of the intellect and even in actual deformities of the jaw. Adenoids and all other obstructions to free breathing should be promptly removed by timely operations.

When a child, because of its delicate constitution, is susceptible to frequent colds so that one may hesitate to take it much outdoors, it should be borne in mind that fresh, pure air really does not give colds, and what are commonly known as colds are often an infectious disease due to a specific micro-organism which fastens itself more readily on a delicate system. To overcome such so-called susceptibility to colds, one should resort to the judicious use of cold water.

From the tenth to the twelfth month one should accustom the child gradually to cold baths. The best time to begin is after its daily warm bath. Rub the child a few times with the hands dipped in cold water, and then wipe it rapidly. By and by one may begin with cold sponging, and later with a little douche. In the use of cold water it is absolutely necessary that the reaction should follow rapidly. This reaction, as is well known, is manifested by a pleasant warmth perceived by the child, and is made visible externally by a reddish appearance of the skin. Whenever cold water is applied to the skin one will notice at first a certain whiteness or pallor which is caused by the contraction of the external blood-vessels. The return of the blood to the external surface causes the reddening of the skin. Whenever reaction is lacking or tardy, the advice of the physician should be sought.

Of course, it goes without saying that a child should always be properly dressed. In order that its lungs may develop to the fullest extent it must not be hindered by restricting garments, particularly not by tight neckwear (constricting collars and bands). Furthermore, it must be remembered that to dress the neck too warmly lessens the power to resist taking cold when there happens to be a change in the atmosphere. The less one is accustomed to bundle up the neck, the more freely will he breathe and the less will he be likely to take cold.

When a girl develops into a young woman, one should bear in mind that the tightly laced corset is one of the most injurious garments which can be worn. Not only is free and natural breathing interfered with by this article of dress, but indigestion and disturbances in the circulation follow excessively tight lacing. Anaemia, or poverty of blood, so often observed in young girls, can very frequently be ascribed to this unnatural mode of dress, which does not permit either a free circulation or sufficient oxygenation of the blood.

We reproduce here three pictures, better to illustrate the result of excessive lacing. Figure 1 shows the situation of the organs in chest and abdomen in a normal thorax. Figure 2 shows lungs, liver and intestines as they appear in a thorax constricted by wearing a tightly laced corset for a number of years. Figure 3 shows the skeleton of a chest deformed by tight lacing.

As soon as the intelligence of the growing child will permit, it should be taught to breathe deeply, and later on be taught to take the following breathing exercises, which it should learn to love as the average boy or girl loves general gymnastics. In front of the open window, or out of doors, it should assume the position of the military "attention," heels together, body erect and hands on the sides. With the mouth closed it takes a deep inspiration (that is, breathing in all the air possible), and while doing so raises the arms to a horizontal position (Figure 4), remains thus holding the air inhaled for from 4 to 5 seconds, and while exhaling (breathing out) brings the arms down to the original position. The act of exhaling, or expiration, should be a little more rapid than the act of inspiration.

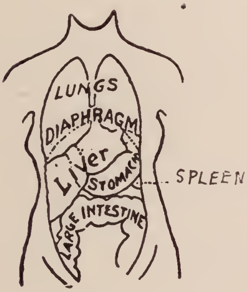


Fig. No. 1.

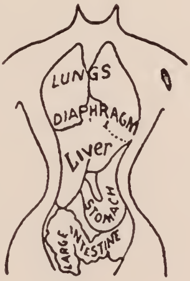


Fig. No. 2.

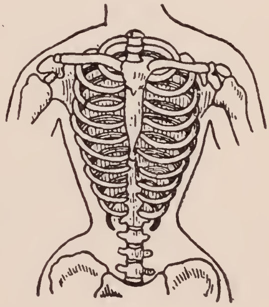


Fig. No. 3.

The act of inhalation occupies about 4, the act of exhalation about 3 seconds, and as has already been said, the act of retention of the air about 5 seconds. The child should be taught to count mentally during these three acts so as to be systematic about holding the air, one can give two upward and two downward movements of the wrist joints counting four, and on the fifth second lower the arms and begin to exhale.

When the first exercise—A—is thoroughly mastered one may begin with the second exercise—B.—One places the arms one above the other, in front of the chest, giving the hands a position as though wanting to tear open the chest (Figure 5). Then hands, arms and shoulders make a backward movement (the fingers remaining bent) while one takes a deep inhalation. Counting again four by tapping the chest four times with both hands and at the fifth second starts to exhale bringing the hands and forearms into the position from which they started. This exercise has the advantage that it can be taken in the sitting position or even when lying down on the back.

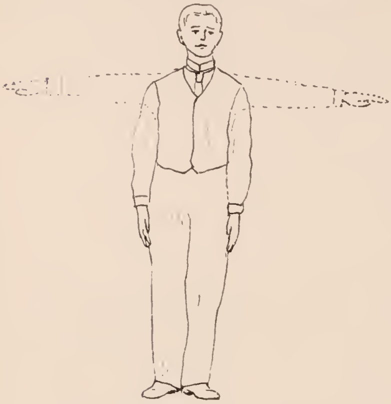


Fig. No. 4, Exercise A.

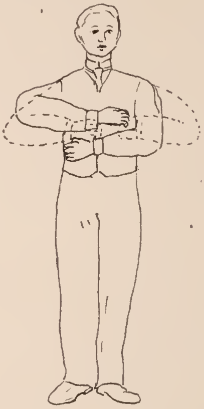


Fig. No. 5, Exercise B.

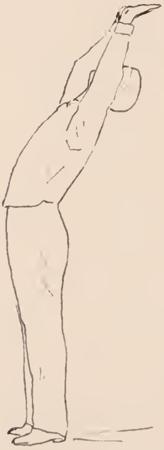


Fig. No. 6, Exercise C.

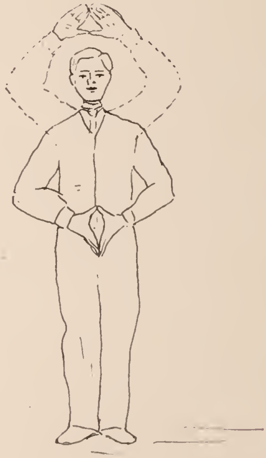


Fig. No. 7, Exercise D.

The third exercise—C—consists in raising the arms from the sides to the horizontal and then above the head (Figure 6), taking a deep inhalation during this act; then bending backward as far as one can and remaining in that position four seconds while retaining the air, counting the seconds by moving the hands alternately, twice forward and twice backward, and on the fifth second one exhales gradually while resuming the original position. During this exercise it should be borne in mind that when the arms are raised until the hands join, one should not bring the arms

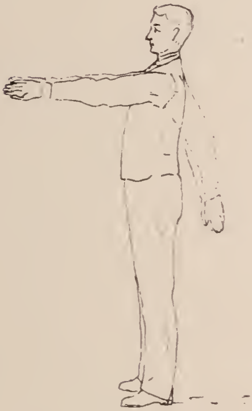


Fig. No. 8, Exercise E.

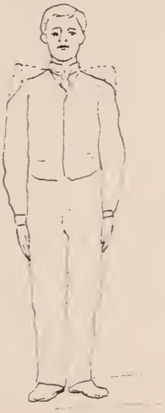


Fig. No. 9, Exercise F.

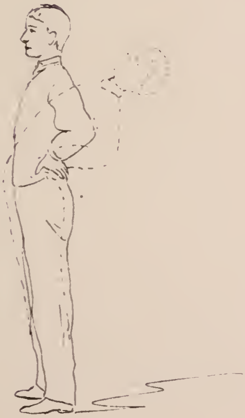


Fig. No. 10, Exercise G.

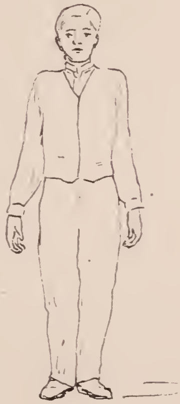


Fig. No. 11, Exercise H.

close to the head but rather form a circle above the head by bending the arms outward enough so that the meeting of the index fingers and thumbs form a triangle.

The fourth exercise—D—is for the purpose of bringing the abdominal muscles also into play, or in other words, combining abdominal and chest breathing. To this end one assumes an erect position, like the beginning of all the exercises, with the hands meeting in front, with the little fingers and the edge of the palms touching the abdominal muscles (Figure 7). While taking a deep inspiration raise the diaphragm, concentrating all attention to this act, and while doing so move the joined hands upward, sliding them along the thorax up to the chin, then turning them and continue to raise them until they are above the head, like Figure 6. Bending backward during the four seconds while retaining the air and then exhale lowering the arms gradually to the horizontal and to the original position of "attention."

The fifth breathing or respiratory exercise—E—, which may also be called a dry swim, requires more strength and endurance. It should not be undertaken until the others have been practiced regularly several times a day for a few weeks, and until an evident improvement in breathing and general well-being has been observed. One takes the usual military position of "attention" and then stretches the arms out as if in the act of swimming (Figure 8), the backs of the hands touching each other. During the inspiration one moves the arms outward until they finally meet behind the back; remaining in this position for the usual four seconds, counting by moving the hands while retaining the air and on the fifth exhale bringing the arms forward again, ready to start for another swim; or if this is the end of the dry swim, the arms return to the original position of "attention."

This somewhat difficult exercise can be facilitated and be made more effective by rising on the toes during the act of inhalation and descending during the act of expiration.

It will be seen that with the aid of these five respiratory exercises every muscle of the body, from the nostrils down to the toes, is put into play. The face alone is at rest and can serve as an indicator that the exercises are properly done, for it must be borne in mind that they must be taken with the muscular system relaxed and all unnecessary contraction of the muscles or tremor-like movements must be avoided.

Of course, when out of doors one cannot always take these exercises with the movement of the arms without attracting attention. Under such conditions one assumes quietly a position similar to "attention," raises the shoulders, making a rotary backward movement during the act of inhaling (Figure 9); remains in this position holding the breath for four seconds, and then exhales while moving the shoulders forward and downward, assuming again the normal position. This exercise—F—can be easily taken while walking, sitting or riding in the open air.

Young girls and boys, and especially those who are predisposed to consumption, often acquire a habit of stooping. To overcome this, the following exercise—G—is to be recommended. The child makes his best effort to stand straight, places his hands on his hips with the thumbs in front and then bends slowly backward as far as he can during the act of inhaling (Figure 10). He remains in this position from four to five seconds while holding the breath, and then rises again somewhat more rapidly during the act of exhalation, assuming the original position with hands on hips.

The following general rule concerning breathing exercises should always be remembered. Commence with the easier exercises (A), and do not begin with the more difficult ones until the former are completely mastered. Take from four to six respiratory exercises (one of A, B, C, D, E or F), or when outdoors simply exercise F, 4 to 6 times every half hour or hour, or at least 4 to 6 times a day and on rising in the morning and retiring at night. Continue this practice until deep breathing has become a natural habit. These exercises should always be taken in an atmosphere as fresh and as free from dust as possible. Never take these breathing exercises when tired and never continue so long as to become tired.

These exercises are, of course, destined for children who are not as yet tuberculous and they should be taught gradually and according to the strength, development and understanding of the child. It must be evident that these exercises, which I believe are of incalculable benefit as a means of helping a child to overcome a tuberculous predisposition, are not indicated in all cases. They can do harm if the child is very delicate and not judiciously advised and guided in the gradual development of its physique in general. They will never be harmful in the healthy child if not overdone. Children as a rule take kindly to these exercises and their love for fresh, pure air and distaste for foul air becomes very strongly developed. There should be no fear that in so-called flat-chested children these exercises can do harm. It is in these very cases that breathing exercises are indicated for it must be remembered that in young children the bony structure yields to the pressure exercised from within. Thus with the aid of such respiratory exercises a flat or hollow chested child can develop into a strong broad-chested man or woman.

It is for all these reasons that the author pleads to make breathing exercises a regular and frequent practice in all schools, so as to develop all the children's chests and bodies in general and make their system as resistant as possible to the bacillus of tuberculosis.

As will be seen from the careful study of the movements described in these exercises, all the muscles of the body are exercised and without any violence.

As an additional means of developing the lungs of children, particularly in school children, we cannot too strongly recommend the frequent practice of singing and recitation in the open air. Many careful observers have noticed the value of such exercises, but particularly Barth in Koslin (Germany). He has made a careful study of the effects of singing on the action of the lungs and heart, on diseases of the heart, on the pulmonary circulation, on the blood, on the vocal apparatus, the upper air passages, the ear, the general health, the development of the chest, on metabolism, and on the activity of the digestive organs, and has come to the conclusion that singing is one of the exercises most conducive to health. Considering the fact that it can be practiced everywhere (where the air is pure) or at any time, without apparatus, it should be much more cultivated than it actually is. The German military authorities which have the reputation for instituting all exercises which tend to invigorate the soldiers have of late years encouraged singing during marches of all troops. Visits to zoological gardens, botanizing tours, geological excursions and mountain climbing should form an important part of the curriculum throughout school life. They will tend to develop the pupil's physique and strengthen its resisting power to the invasion of the tubercle bacilli. These outdoor instructions should not even be limited to the summer season only.

Besides the above described exercises there is one more which the older child particularly, after having learned all the other movements, can add to his means of developing his chest by taking in the greatest possible amount of pure, fresh air. To this end he takes exercise H which is accomplished in the following way: He takes the usual position of "attention," then inhales deeply, rolling the shoulders upward and backward, holding the air for four seconds, as in exercise F, fig. 9, and on the fifth second exhales all he possibly can, resuming again the original position, but before again inhaling makes a second expiratory effort while turning his arms outward (movement of supination) and pressing the inner sides of the upper arms against the chest (fig. 11). He thus, so to speak, squeezes out all the air there is left in the lungs. A vacuum or emptiness in the lungs is created and the patient involuntarily takes a very deep inhalation, and after that assuming the ordinary quiet position of "attention,"

To show the value of this exercise let me again repeat here that during ordinary inhalation and exhalation, that is to say, quiet respiration, the amount of total air inhaled is only 500 c. c., the volume which can be inhaled by the first exercises is 1,500 c. c., and the volume which can be exhaled by this exercise is about 1,300 c. c. When now by the second expiratory effort, aided by the supination of the arms and pressure against the chest, 500 c. c. more of reserved or residual air can be expelled, the value of this exercise taken before going to work, at recess and on return from work, or whenever one is environed with fresh, pure air, must be evident.

The fact that in the majority of cases the tuberculous process begins at the apices (summits of the lungs) has been explained by the supposed bad inspiratory function of this part of the lungs. Now, I agree in this respect with Hanau* and consider the almost universally adopted statement of the deficient inspiratory function of the apices erroneous. On the contrary, these portions of the lungs inspire excellently well, almost too well for dust and all sorts of micro-organisms enter there most easily and are found in large quantities in careful post-mortem examinations. What is faulty is the expiratory function of the apices. A thorough exhalation followed by a forced expiratory effort, as just described, is, to my mind, the only possible way to improve this defect and prevent stagnation and congestion, which, as is well known, form excellent media for the development of bacilli.

If it would need any argument to prove the value of a well developed chest and deep frequent respiration of good, pure air, we could refer the doubters to the statistics which prove that mountaineers have deep, well developed chests and are the most immune to tuberculosis of all people. While, of course, it must be taken into consideration that the mountaineers live as a rule in less crowded regions, there is no doubt that their wonderful chest development is one of the principal reasons of their relative immunity from tuberculosis. In the mountaineers it is the physiological effect on the human body of high altitudes. The circulation is slower, often below the normal in those living constantly in the mountains and their breathing is deeper, the inspiration longer and the expiration more complete.

---

*Hanau, A., Zurich; "Beitrage zur Pathologie der Lungenkrankheiten," Zeitschr, f. klinische Medizin, XII, 1887.

That through proper breathing of outdoor air and good, sensible training, proper and regular feeding a child from tuberculous parentage needs never to develop tuberculosis must be evident. However, this is not merely a matter of belief with me but has become an absolute conviction based on experience. I began my medical career over twenty years ago in Southern California in the City of Los Angeles. It was at that time a small city inhabited by a great many consumptives who had come there hoping that the climate would restore them to health. I was privileged to treat a goodly number of these patients. Some got well, some improved and some died; but what was most interesting to me was the following observation: A number of patients brought their little children with them and some had children after their arrival as consumptive invalids in Southern California. That these parents transmitted to their children a predisposition to tuberculosis was evident. I merely practiced the principles which I have just given and it was my privilege to see many of the children develop into good, strong and healthy men and women.

In order to give the child the greatest possible opportunity to breathe fresh, pure air and the best chances for physical development there must other things of course be done besides teaching the child to breathe properly. First, the child must have more years of play. A child should not go to school before its 8th year. Throughout its child life it should have more hours of sleep than most children have and child labor should of course be done away with as incompatible with the solution of the tuberculosis problem. There should be more playgrounds. With the help of a good strong wire fencing and awnings such a roof garden could be utilized the greater part of the year and for children of all ages.

Children's school farms, such as are conducted in New York under the admirable directorship of Mrs. Henry Parsons, should be multiplied by all large and small cities. Such a farm, particularly when located in a congested district, does both preventive and constructive work. The child predisposed to tuberculosis, when it has an opportunity to spend the greater part of the day doing gardening work, learns to love outdoor life and outdoor pursuits which, of course, is of the greatest advantage to its future physical welfare.

Outdoor games and temperate athletic sports should be encouraged everywhere in children's schools, and not only in colleges, and outdoor games and light sports should not be limited to the male sex alone, particularly not during adolescent life.

After the child has gone through school and even when it has seemingly overcome its predisposition, it is well to bear in mind the possibility of a relapse into such a condition through an unwise choice of profession or calling. An occupation or profession demanding a sedentary life and exposing the individual to the inhalation of vitiated air and much organic and inorganic dust, is unsuited for anyone who is or was once predisposed to tuberculosis.

Concerning the prevention of post-natal infection, we must, of course, first think of the infection from tuberculous milk. To this end we must first prohibit the tuberculous mother from nursing her child and secondly, see to it that the artificially fed child is provided with milk absolutely pure and absolutely free from tuberculous germs and other pathogenic micro-organisms.

We will not enter here into the discussion of which method, wholesale sterilization or dairy supervision and milk inspection, is the most secure. In individual cases it would seem that proper sterilization is the safest method of rendering the milk germ-free. It goes without saying, of course, that under such circumstances a healthy wetnurse is the ideal for a child which has come into the world physiologically impoverished.

The most frequent sources of post-natal infection are perhaps the following: the consumptive mother or nurse caresses the child and kisses it on the mouth; she carries the child on her arms, coughs over it, and a drop infection from a bacilliferous spray ensues. She prepares the food tasting it to judge its temperature and flavor through the same rubber nipple or with the same spoon the child uses, and thus unconsciously conveys the germs of her disease from her own mouth to that of the child. Later on the child will play on the floor of the room, and should there be a consumptive in the family, who from carelessness or ignorance is not careful in the disposal of his expectoration, the child is indeed likely to be infected. The little one while playing on the floor may with great facility inhale the bacilli floating with the dust in the air and can thus acquire tuberculosis by inhalation, the full development of which may only take place in later years when the origin will not be thought of. Again, the little child touches everything it can take hold of, infecting its fingers thoroughly, and by putting them in its mouth tuberculosis by ingestion may result and gradually develop into consumption of the bowels. Lastly, should the child's nails be neglected it may scratch itself with the infected fingers, and thus inoculate its system with the disease. Tuberculosis of the skin, or lupus, may result from such an unfortunate accident.

To prevent these infections during childhood is certainly possible by taking the following precautions: Not only should consumptives be religiously careful with their expectoration, but they should associate as little as possible with young children, and stay away from playrooms and playgrounds. We repeat that to kiss children on the mouth should never be allowed and the little ones should be taught never to kiss nor be kissed by strangers. They should be kissed by their own friends and relatives as little as possible and then only on the cheeks. The floor on which the child plays should be kept scrupulously clean. Fixed carpets in such a place are an abomination; they only serve as dust and dirt collectors, and not infrequently harbor the germs of contagious diseases. The hands and nails of little children should be kept as clean as possible.

Expectorating on playgrounds should be considered a grave offense and should be punished accordingly. These playgrounds should be kept clean, as free from dust as possible, and strewn daily with clean sand or gravel.

At school the child may contract an ingestion tuberculosis from partaking of half-eaten fruit from its tuberculous fellow pupils, or by the exchange of bean-blowers, musical mouth instruments or chewing gum.

The possibility of inoculating the child with tuberculosis, even if it is not predisposed, happens in rare instances through ritual circumcision. I have been able to collect about twenty authentic cases; but the surgical literature of all countries, where Israelites practice this rite in the orthodox way, continues to contain reports now and then of cases of tuberculous infection through this mode of circumcision. The tuberculous inoculation following this operation manifests itself first as a local disease of the genital organs, from whence it becomes generalized in a great number of cases. The operation of circumcision, when skillfully and carefully performed, is in itself trifling, but the sucking of the prepuce afterwards makes it dangerous, for it is evident that if the operating rabbi should be consumptive, inoculation becomes very possible. Since it will be difficult to stop this practice by a simple protest on the part of physicians, and as the law cannot interfere with the free exercise of a religious rite, I should suggest as a remedy that only such persons should be allowed to perform circumcision as have shown the necessary skill before a medical board of examiners, and that every time they are called upon to perform the rite, they should submit themselves to a medical examination. Only when bearing a certificate from a regular physician, stating the absolute freedom from specific diseases, should they be allowed to perform ritual circumcision.

As another reliable measure against the possibility of inoculating the child, when the parents insist upon the orthodox method of circumcision, is the suction by the aid of a glass tube, as practiced in France and Germany.

I feel it a duty to mention here another source of exposure of the non-tuberculous child to tuberculous infection to which benevolent societies and municipalities should pay attention with a view of avoiding it. There is in some cities a custom of giving the infant foundlings who do not improve in the hospitals, to homes in the country. There those children are taken care of by families who are of good repute but in moderate circumstances. The authorities who send babies there, as a rule never ask who is going to take care of the baby. In many instances an invalid who not infrequently is tuberculous is entrusted with this care taking. Rarely is he intelligent or over conscientious and thus it is almost inevitable that he will give tuberculosis to the little child in his care.

I cannot conclude this too meager treatise on so important a subject without mentioning here a purely philanthropic scheme intended to overcome the predisposition which a child may have inherited from its tuberculous parents. My late and much regreted teacher, Professor Grancher, of Paris, inaugurated some years ago by his own and Mrs. Grancher's magnificent gift of several hundred thousand francs, a movement which he called "l'Oeuvre de preservation de l'enfance contre la tuberculose." As the name indicates it means to protect the children from becoming tuberculous. This society through its agents selects children from tuberculous parents and with their consent takes the children to homes in the country where they are carefully supervised and watched by the society's agents. The very best of food and outdoor life and good home hygiene is secured for the children and the society's reports for the last few years certainly show that the work is truly a work of preservation of life and gaining of health and strength which is after all the best immunity against tuberculosis.

It is to be sincerely hoped that Grancher's work may find emulators in this country and all over the world. It should be the rule in private, dispensary and hospital practice to insist upon the examination of all children of tuberculous parents.

The examination for tuberculosis or tuberculous predisposition of all children entering public, parochial or private schools and their periodical re-examination for tuberculosis should also be made a feature of an intelligent and thorough tuberculosis campaign. It is only by such means that the predisposed child can be easily discovered. The more attention we pay to avoiding tuberculous infection during childhood, the more carefully we study the early recognition of a condition predisposing the child to consumption, the more we direct our energy and whatever skill and knowledge we may possess to this end, and the more we interest philanthropic friends in the cause of overcoming this tuberculous predisposition, the greater are our chances for ultimately eradicating the disease in the adult and becoming complete masters of the great white plague.

16 West 95th Street.

Atropine Methylbromide in Infantile Eclampsia.—A patient of Dr. Heiman (boy, 5 months old) suffered from broncho-pneumonia, and developed severe attacks of eclampsia during the course of the disease, so that his life was despaired of. Baths given during the attacks only gave temperary relief. Finally, 0.0001 Gm. (1-600 grn.) of atropine methylbromide was injected, and the attacks ceased almost at once. The following day it was necessary to give two more injections, after which no more convulsions were seen. Recovery then rapidly set in. —Muench. med. Woch., 1908, No. 21.

UNCINARIASIS IN THE SOUTHERN STATES.*

By J. Ross Snyder, M. D.,

Birmingham, Ala.

PEDIATRIST TO HILLMAN HOSPITAL.

Although the nature and the cause of hookworm disease was understood in the old world as far back as 1843, not until 1893 was there any authentic case of the disease reported in the United States. Between 1893 and 1900 a few cases of the disease were recognized and reported. But as late even as 1902, medical writers in America were still regarding the cases of hookworm disease observed in this country as having come through association with foreigners, who had brought infection with them from the old country. There was, however, in the United States, at least one man, who early differed from this opinion. Dr. Ch. Wardell Stiles had, for a number of years prior to 1900, been teaching his classes in medical zöology in the Johns Hopkins University and in the Georgetown University, that the hookworm disease was very probably of frequent occurrence in the United States.

It was through association with Stiles that Bailey K. Ashford, a student at the Georgetown University, was prepared to recognize hookworm disease when he later met with it in Porto Rico while serving on the medical staff of the U. S. Army. Ashford found the disease so common in Porto Rico that he published in 1900 a report of his observations and in the same paper warned the profession in the States against the possible dangers of infection from returning soldiers.

---

*Read before the Association of American Teachers of the Diseases of Children, Chicago, Ill., June 1, 1908.

This publication attracted attention at once and by placing the profession in this country on the alert, was of very great assistance in securing for Stiles the first corroborating evidence of the correctness of his theories. In 1901 in the report of the Bureau of Animal Industry, Stiles published a monograph on the subject of uncinariasis, and having in hand at this time a number of reliable case reports from various sources, he made public announcement of his conviction that uncinariasis was a more common disease in this country than was generally believed.

Stiles, moreover, discovered (1902) that hookworm as it existed in America was not identical with the old world hookworm, but though resembling the latter closely it had sufficient anatomical differences to deserve for it a distinctive name. He suggested *Uncinaria Americana.* To physicians the most important and interesting one of these differences, for it involves a point in prognosis, is the absence in the new world species of a ventral hook. By tours of personal inspection through the Southern States and by confirming reports from resident physicians, Stiles has proven this theory that hookworm disease is widely prevalent in this section of the country. In Bulletin No. 10, Hygienic Laboratory, P. H. and M. H. S., he says, "Taking the Southern Atlantic States as a whole, the hookworm disease is one of the commonest and most widespread maladies; ranking in frequency with malaria, tuberculosis, and gonorrhea."

Other trips since taken through this section have only impressed him with the conservatism of this statement.

Stiles is a wonderfully keen observer and the conclusions reached by him with reference to some of the predisposing factors in the disease are as follows: (1) uncinariasis is preeminently a disease of sandy localities; (2) infection occurs chiefly in rural districts, but this is true simply because it is in such districts that less attention is given to the disposal of fecal matter and because more people in such localities are brought in daily contact with the soil; (3) whites are more often and more severely infected than negroes; (4) infection, as a rule, takes place in more than one member of a family; (5) children and women show a more severe infection than men; (6) in hot weather the symptoms of the disease are exaggerated. To these I would add (7) the disease is seen most frequently in people under 30 years of age. The possibility of infection in children under 2 years old is very slight.

The parasite of uncinariasis is about half an inch long and it lives in the small intestine. Its behavior there and how much injury or traumatism it may produce on the *mucosa* of the intestine cannot be positively stated until further post-mortem investigations have been carried on. Opportunities for autopsy work are rare on account of the fact that the disease responds so favorably to treatment and because even the most desperate cases are rarely sent to hospitals, etc.

Harris, pathologist of the Cook County Hospital in 1902 performed an autopsy on a hookworm patient, age 52 years, dying in that institution. Among other findings he met with "some ecchymotic spots on the mucosa of the intestine at the point of attachment of the parasites. Scattered along the rest of the intestine a few other ecchymotic spots were seen. These latter were regarded as points of previous attachment. There was also hemorrhage into the intestinal lumen. The mesenteric glands were of a pink color and enlarged."

Stiles believes the parasite is a bloodsucker and that it inflicts real injury to the intestine. He admits that the parasites in all probability produce poisonous substances which set up in the patient a general toxemia. Colbert, who treated 5,000 cases of hookworm in Porto Rico, in a recent article, questions the correctness of some of Stiles's conclusions. Colbert is convinced that the worm is not a bloodsucker and says that of 200 worms examined by him only 3 contained blood. He believes the blood in these few cases was to be explained by accidental contamination. He regards the symptoms of the disease to be due entirely to the toxemia. He believes that infection by the mouth occurs very infrequently. The mode of entry in Porto Rico, at least, is by penetration of the skin—99 per cent. of his cases gave a history of uncinarial dermatitis. Colbert says that any kind of soil, sandy or otherwise, with sufficient shade and a favorable temperature (high) furnishes cultures of larvae. Some of the differences of opinion of these observers are due, no doubt, to their studies being conducted in entirely different localities. So far I am unable to find any medical writer, who, having studied the disease in this country, is willing to disagree with the conclusions reached by Stiles.

All writers agree on the very important point that uncinariasis is due to soil pollution from careless disposal of feces and that it is therefore a preventable disease.

The characteristic feature of hookworm disease is anemia. Though varying in degree with the severity of the infection, anemia is always present. The diminution in hemoglobin percentage is generally out of proportion to the reduction in the red blood corpuscles. The mucous membranes are blanched. The pulse is accelerated. Often there is dizziness and headache. Haemic murmurs, especially in children, and cervical pulsations are frequent symptoms.

Children infected by hookworm are dull, apathetic and exhibit none of that show of animal spirits which is so natural and so charming at this period of life. These children are sickly and weak,—they tire easily either at work or at play. The child whose infection though real is not sufficiently severe to render him patently ill is often known at school as the dunce and at home as the blockhead and lazy-bones. Too often he is a victim of bullyings from his schoolmates, from his teacher and from his home associates. The preacher joins sides against him; even the good old family doctor will lose patience and advise that the best medicine for poor John is a "good cow-hidin'. "

Sometimes a whole family may be infected and such a family or families command little sympathy but are styled a no-account lot, too trifling and lazy to try to make a living so long as they can get enough tobacco and snuff to use. Not infrequently entire communities are infected.

In severe cases, distention of the abdomen, "pot-belly," is a prominent symptom and may, more often in summer, become extreme. Although adults suffering with hookworm disease are usually constipated, children more often have a diarrhoea. Vomiting, according to Sandwith and Stiles a rare symptom, was of frequent occurrence in the majority of my cases,—all children. Both diarrhoea and vomiting in these children are due to general weakness induced by the disease and to the indigestibles so often craved and eaten by hookworm patients.

One of my patients, a boy, aged 6 years, was dull to stupidity in every other respect but would, when under surveillance, display great cunning in his attempts to secure tubers, such as raw potatoes, raw radishes, raw turnips, etc. It was significant that this boy should like these delicacies best in an unwashed state. Dirt-eating is not an uncommon thing among hookworm victims.

Although four of my cases had perverted appetites, I had but one dirt-eater unless the boy just mentioned is to be so classed. This dirt-eating occurred in a little girl 26 months old. Children this young are not fastidious—an indiscriminate appetite for every thing in reach is not unusual. The dirt-eating of this particular baby might have been explained on this ground had she not displayed a decided preference for a certain kind of dirt,—red clay.

Albumin was present in the urine of two of my moderately severe cases. It was present in one case that was regarded as very mild. One of my cases had an enlarged liver. Two cases had enlarged spleens.

Although the diagnosis of hookworm disease in severe cases is not hard to make on clinical symptoms, in every case microscopic examinations of the feces for eggs should be made. For those to whom the microscope is unavailable, Stiles suggests the use of blotting-paper test.

This test consists in placing about an ounce of fresh feces on a piece of white absorbent paper; allow it to stand an hour; remove the feces and examine the color of the stain. In about 4 out of 5 cases of medium or severe uncinariasis, the color is reddish brown and immediately reminds one of blood stain.

Since one can expect positive findings in but a majority of medium or severe cases and since the findings even when positive are open to many errors, I regard this test as practically useless.

To those not in a position to make a microscopic examination, Stiles suggests still another procedure—one that is not open to objection. The suspected case of hookworm is to be given a modified course of thymol treatment. The actions are then examined for the parasites, which are discernible to the eye, being half-inch long, as thick as a hat pin and with one end curving back to form the hook.

The egg of the uncinaria is elongated and oval, it has a thin shell and in fresh feces the protoplasm is unsegmented or in very early stages of segmentation. By washing and sedimenting the feces, eggs will sometimes be found that were otherwise unrevealed.

The treatment of hookworm disease has two objects; 1st, the removal of the cause by the expulsion of the parasites from the alimentary canal; 2nd, the building up of the patient.

Thymol, beta-naphthol, male-fern, and calomel have all been tried as anthelminthics in hookworm infections. Calomel is not effective unless continued at short intervals over a long period of time. Male-fern is expensive and is not so sure as either thymol or beta-naphthol. Beta-naphthol is used extensively in Porto Rico and some of the South American provinces. Physicians in this country most commonly use thymol.

After a day's liquid diet, the patient is given at 4 p. m. a large dose of magnesium sulphate. At 8 a. m. the following day thymol, 5 to 20 grains, according to the age of the child, is administered finely triturated and in capsule. The same dose of thymol is repeated at 10 a. m. At 12 noon another dose of Epsom salts is given.

Thymol can be given in larger dosage than the older text books admit but a dose sufficient to be effective against the parasite of uncinariasis is not without its dangers.

A little girl 26 months old to whom at 8 a. m., I had given 7½ grains of thymol, broke out in a profuse cold sweat at 9 a. m. The little patient then rapidly became cyanosed; the pulse thready, the respiration slow and shallow; the pupils contracted; the reflexes abolished—and the child in a profound stupor. Atropine sulphate gr. 1-500 was given hypodermatically. Heat and chafing were applied to the extremities, while hot saline bowel irrigation was made continuously for 45 minutes. At the expiration of this time the child's pulse and respiration were good.

Two weeks previously this child took both the 8 a. m. and 10 a. m. dose, 15 grains in all, without the least unfavorable symptom presenting.

One month before she had taken a combined dose of 20 grains of thymol without toxic symptoms except slight nausea and much drowsiness. Notwithstanding the experience related above, I regard thymol in properly large doses a comparatively safe drug—I would say about as safe as ether when the latter is used as a general anaesthetic. Whenever possible a trained assistant should keep the patient under observation during either beta-naphthol or thymol treatment. It should be remembered that thymol is soluble in alcohol and in oils and that if administered with either of these will be absorbed into the system.

One course of thymol may not rid the patient entirely of worms. One or two courses will be sufficient for the majority of cases, others will require 3, 4 or even 5 courses of treatment before negative findings follow an examination of the feces. Until the eggs disappear the feces should be examined at intervals of ten days and treatment renewed or discontinued according to findings.

Treatment of the depleted and anemic system is to be carried on during the intervals between thymol medication, and as long after the latter is discontinued as may be deemed necessary.

Those patients, who possess perverted appetites are to be watched and no case should be allowed any but nutritious and easily digested food. After one treatment of thymol, a corrected diet usually relieves the diarrhoea.

A few drops of tinct. nux-vomica administered before meals stimulates a more wholesome appetite. The anemia is to be met with iron.

These children should be removed from school until they are better prepared to compete with children of their own age. The household must be patient and ought never to subject the afflicted one to humiliation or taunts.

Habits of personal cleanliness must be instilled into these children in order that reinfection may be avoided.

The prognosis for a complete restoration to the normal in young children, who have not entertained the parasite long, is very good. Long infection with hookworm, however, may have so retarded the physical, mental, and moral development that, though infinitely better off and though free of parasites, the subject may be forever dwarfed and handicapped in his occupation or pursuits in life.

As the cases of hookworm disease that I have had under my personal observation and treatment number but seven, it would have been presumption in me to have written this paper without making repeated reference to Stiles. All my cases excepting one, occurred in children living in the city of Birmingham. Only one of this number furnished a history of visiting in a sandy district. The little dirt-eating patient, already referred to, often played in an artificial sand bed arranged for her pleasure in the front yard. This child was a thumbsucker and although the sand was not examined for hookworm larvae, I feel sure it was the source of her infection.

In the rural districts of Alabama I have seen a large number of children and adults, whom I regarded, with many reasons for being right, as being infected with hookworm. I am fully convinced, as is every medical man in the South, who has watched the accumulating evidence of the wide prevalence of hookworm disease and who has studied the effects of the disease, that there is no exaggeration in Stiles's statement that "in uncinariasis, we have a pathologic basis as one of the most important factors in the inferior mental, physical and financial condition of the poorer classes of the white population of the rural and piny wood districts (of the South)."

We believe that the tremendous economic waste incident to the weakened virility and the non-productiveness of a large percentage of the rural population of the South can be in a large measure prevented by a systematic and an organized effort to suppress the hookworm disease. Personally I believe that the solution of this question is of far more importance to the South than the solution of the negro problem.

Dr. Stiles not long ago addressed a medical assembly on the economic side of the hookworm disease. After listening to this address a doctor, who was a recently defeated candidate for the governorship of a southern state, made the statement that were he again to run for this office, he would build his platform out of privies!" He would make the compulsory building and the compulsory usage of them throughout the state his slogan!

Some day the name of Stiles will be as much revered and as much honored in the South as are the names of Reed and his noble band, who taught us how to free ourselves from the scourge of yellow fever.

616-618 Brown Marx Bldg.

EXAMINATION OF THE STOOLS OF INFANTS.*

By John Zahorsky, M. D.

It is gradually becoming generally recognized that the so-called curds in the stools of infants are not casein coagula but soaps. Repeated analysis has shown that these curds are composed principally of the fatty salts of calcium.

It occurred to me that it would be valuable to have some clinical tests by which the "curds" of soaps and the "curds" of casein could be readily distinguished; for it must be admitted that their gross appearance is very deceptive. Numerous tests and experiments were made to find a reagent which would promptly reveal the nature of the curd, but in many instances owing to the composite nature of the coagulum the reactions and tests were somewhat doubtful, hence it is necessary to try several tests in order to reach definite conclusions.

Appearance. The curd composed of soaps is more granular in appearance and can usually be readily crushed with a spatula.

Formaldehyde. If a coagulum of casein is placed for several hours in a strong solution of formic aldehyde it becomes tough and leathery. A lump of calcium soap is not hardened to any appreciable extent by this process.

Solubility. A lump of calcium soap is almost completely soluble in absolute alcohol to which about 10% of hydrochloric acid has been added. The casein curd is not affected by this menstrum. If a suspicious lump is taken from the stool, first thoroughly shaken with petroleum ether, which removes the fat and fatty acids, then decanted, a considerable residue remains. Hot water removes an additional quantity (soluble soaps). Finally, acid alcohol may be used which removes the insoluble soaps. After this a small residue remains varying in amount in different stools. The nature of this residue was not determined, probably it consists of bacteria, cells, mucus and rarely casein.

---

*Read at the Bethesda Pediatric Society, St. Louis, Sept. 25, 1908.

Stains. An attempt to find a specific stain among those ordinarily found in a clinical laboratory met with partial success. I found iodin a very reliable stain. The mass of feces should be cut in half in order to expose the inner structure. Tincture of iodin is then poured on the masses in a test tube or dish. After ten minutes it is thoroughly washed with alcohol, which almost completely decolorizes the mass composed of soaps but has little effect on the brown-colored casein.

Another stain which may be used is carbol-fuchsin. This intensely stains both soaps and casein masses; in the former the ordinary decolorizing agents will remove most of the stain, while the casein is with difficulty decolorized. In general the avidity of casein to stains is much stronger than the coagula of stools which are composed principally of soaps, and the former holds the stain with greater tenacity. By use of these several tests the clinician can with certainty decide whether a certain lump in the stool is composed of soaps or consists principally of casein.

Quite a large series of tests have convinced me that casein coagula in the stools are very rare.

II.

Another interesting phenomenon concerning the stools is the change of the yellow to the green stool. About two years ago I reported some observations with which the conclusions of Wernstedt were not in accord.

The yellow stool owes its color principally to bilirubin. If a mass of yellow stool is shaken with chloroform, this menstrum soon becomes intensely yellow showing that the coloring matter is dissolved. This corresponds to the properties of bilirubin. But chloroform does not dissolve the green pigment of green stools.

Absolute alcohol however, dissolves the green pigment, especially if acidulated with hydrochloric acid. A beautiful green solution may thus be obtained. Hence, the green color is probably biliverdin as has been asserted by several authorities and denied by others.

When a stool showing a slight greenish tinge is exposed to the air it often becomes intensely green. By trial I found that this change to the green color can not be prevented by placing the stool in a covered dish with 40% solution of formic aldehyde. It seems therefore, improbable that the oxidation of bilirubin to biliverdin depends directly on the activity of microorganisms.

Koeppe (Monat. f. Kinderhelk. 1906) followed Wernstedt's researches but was unable to corroborate his main conclusions that the oxidase depends on mucous corpuscles. He declared that in order to produce the green color a peroxid must be present in the stool, a ferment to decompose the peroxid and a pigment which turns green on oxidation. Koeppe asserts that the addition of peroxid of hydrogen to a yellow stool will gradually turn it green. While this is true in the main, tests show a marked difference in the natural green stool and those artificially produced. Every stool possesses the power to decompose hydrogen peroxid, that is contains a catalase, hence the presence of the ferment is invariably present, and if the pigment is invariably bilirubin, according to the rules of Koeppe, it would seem that the presence of a peroxid would almost invariably induce a change of the yellow stool.

As a matter of fact the most common process in the stool is a reducing process. It is by the reducing action of bacteria that the yellow bilirubin is changed to the white hydrobilirubin which forms the principal pigment of the light colored and clay colored stools. Hydrobilirubin is very rarely found in the stools of breast-fed infants, while it is generally present after the seventh day of life in artificially-fed babies. The light-colored stools signify that bacterial decomposition of the intestinal contents has taken place, since reduction processes accompany proteid putrefaction.

Hecht (Munch. Med. Woch. 1907) lays down the rule that the green stools can appear only when the reduction processes in the intestine are hindered in some way. As these reduction processes accrue in the large intestine it seems rational to assume that any condition which forces the intestinal contents rapidly through the colon would prevent the reduction of bilirubin and thus give an opportunity for its oxidation. Strange as it may seem then, any cause which diminishes the putrefactive processes in the intestine should favor a yellow or green stool rather than the white stool. It is probably for this reason that green stools follow the administration of calomel and sometimes castor oil.

Wernstedt made the point that the green pigment adhered to the mucus principally, but this has no special significance since Scharlemmer found that mucus has a special affinity for bilirubin.

The actual cause of the green stool is still not clear although we are gradually becoming better acquainted with some of the conditions under which bilirubin is oxidized.

In conclusion, I wish to call attention to the Schmidt sublimate test. If a concentrated solution of corrosive sublimate is added to fresh feces which contain hydrobilirubin a peculiar red discoloration is present. This test may be used in differentiating cases of suspected acholia from the very light stools of so-called milk indigestion.

1460 S. Grand Ave., St. Louis, Mo.

OBSERVATIONS ON FAT-INCAPACITY IN YOUNG INFANTS.*

By A. S. Bleyer, M. D.

Without clearly understanding in what way the presence of fat in a rational milk mixture can be the cause of vomiting, colic and constipation, I have made it a practice for some time whenever confronted with a vomiting baby, to remove the fat from the milk, for experimental purposes.

It has seemed to me that where the fat was removed the indication for sodium citrate becomes relatively infrequent, and I do not now administer the soda until I have ascertained if the removal of the fat does not for the moment solve the problem. It is quite certain that there is a group of cases in which either method will meet with equal success. I have seen high proteids well tolerated by vomiting babies upon the removal of the fats.

In practically all of my cases there were large white curds in the stools at some time or other during the vomiting period. I do not know anything of their relation to the vomiting or pain except that of incidence and wish only to state that they were usually present.

As for the occurrence of colic, it was present in most of the cases and was noticed in every one of the five observed in babies exclusively on the breast. What its existence may have to do with the presence of fat in the milk I do not know, nor am I certain that it has any relation whatever, like the hard curds its occurrence is here noted.

In this series there were five exclusively breast-fed babies and about twenty exclusively fed on cow's milk modified. All my cases have been under five months of age. Following are examples of these groups:

---

*Read at the Bethesda Pediatric Society, St. Louis, Mo., Sept. 25, 1908.

J. G., a fine looking exclusively breast-fed baby of six weeks, first seen on December 2nd, 1907. Mother not neurotic and is intelligent. Baby has been attended for three weeks by two physicians for obstinate constipation and attacks of intense pain, coming on several times every day and lasting for a half hour at a time or longer.

Baby vomits after every nursing, on one occasion three hours afterwards, he often vomits at night. At times he seems to get much relief by this act. The muco-cutaneous region of the anus is violently reddened but there is no intertrigo present. Examination of one ounce of mother's milk expressed from one breast shows 6.1% fat by the Babcock test, it is not of a normal bluish tint but looks creamy. Since yesterday the appetite has failed, there is an abundance of mucus in the stool and small white masses of rather hard consistence, besides this there are many small masses containing a few grains of yellowish-brown sand enclosed in mucus. Examination of these sandy masses shows them to be made up of thousands of hair-like fatty-acid crystals.

Mother placed on a limited fat-free, strictly nitrogenous diet with tea and water and told to take exercise. Each feeding was preceded by a half ounce of weak barley water to which was added four grains of citrate of soda, each nursing from the first milk from both breasts. An enema of saline solution ordered for each morning.

Under this diet the mother's milk diminished in amount of fat to less than half within four days. During nine days there was no improvement in the child and he lost several ounces in weight. On December 11th, the breast was discontinued and a weak mixture of Horlick's malted milk was ordered, soda and barley water stopped. By the end of thirty-six hours the awful crying spells and all pain had disappeared, the vomiting disappeared coincidently, no white masses in stools, no sand. During this week the baby gained five ounces and was sleeping seven hours without awaking at night, the bowels were moving two or three times daily.

In one week it was again attempted to put him to the breast, with however, a return of the above symptoms in great intensity. It was therefore discontinued a second time and the maltose food ordered continued for two weeks longer.

Four months later, i. e., on April 27th, 1908, the mother reported that when the child was put to the breast the second time, the symptoms above enumerated failed to return, he now at six months weighed 16 pounds and 3 ounces. I regret very much that I did not give a modification of cow's skim milk for this child, for the evidence against the fat, if it is present in this case would then have been stronger.

Another instance of this type in a breast-fed baby was brought to my notice by Dr. Royston of the Washington University Maternity Outclinic. This was a colored male child of four weeks weighing 7 lbs. 8 oz. Nursing habits had been good, mother a primipara; breasts were of the conical type and were turgid. Bowels had been moving two or three times daily until past few days when, coincidently with what seemed to be colic, the child had become constipated, the stools had been large, yellow and sometimes slimy, in all the stools during these past days there had been large white lumps. Baby strains at stool, stools seem to have become hard. Examination of breast milk, one ounce extracted from one breast contained approximately 6.6% fat, that is the cream layer reached in 24 hours in Holt's creamometer.

Four days later Dr. Royston reported that the baby was very sick, that he was suffering intensely and that something must be done. He was now vomiting every feeding, there had been no stool within two days. Several doses of milk of magnesia resulted in the passage of a very large stool of a coppery color containing many air-bubbles, it smelled exactly like rancid butter and was inclined to be ropy. Unfortunately a fat determination of this stool was not made.

The mother was now placed on a strict diet, the first half of each feeding was taken from both breasts in order to avoid the deeper milk and fifteen drops of milk of magnesia were administered in a half ounce of sugar of milk water immediately before each feeding.

Three days later examination of the milk gave a reading of 2.5% by the Babcock test and there had been a satisfactory disappearance of vomiting and pain. This was on September 8th last and Dr. Royston reports more recently that save for occasional crying, everything is all right with the baby now.

Following are brief reports of cases of this type fed exclusively on modifications of cow's milk:

Wm. P., age four months, white, seen on the 3rd of this September. For two weeks baby has been taking 40 ounces daily of milk from the laboratory of the St. Louis Pure Milk Commission, containing proteids 1.5, fats 3.2, sugar 6.5, lime water 7, and has been vomiting every feeding.

Dr. Bassett saw this case for me at my feeding clinic and because of the vomiting and the weight of the infant, 7 lbs. 4 oz., reduced the percentages to proteids 0.9, fats 2.2, sugar 5.5, lime water 5; giving 36 ounces of food per day; energy quotient of 69 per pound as opposed to 101. This change was made on September 9th and on September 14th the mother complained that there was no improvement in the vomiting, besides this the child was doing a great deal of crying, seemed hungry, was constipated and passed white masses in the stools and had lost 3 ounces in weight.

A prescription for certified milk, proteids 1.15 instead of 0.9, fats 0.2 instead of 2.2 and sugar 6 without lime water was given. Daily quantity 36 ounces, calories 373, quotient 53 as opposed to 69. Three days later the mother reported with the baby, there was now no vomiting for the first time in four weeks, it had stopped immediately upon the withdrawal of the fats. I did not see a stool but the mother stated that they were moving easily and without any hard masses. This baby was seen again on September 21st and on September 24th, he has not vomited a single time since September 14th and has gained 3 ounces. On the latter date the quantity of food was increased to 1262 grams, containing 598 calories, 1% of fat was added and one more percent of sugar.

The second case in this group is that of M. K. This baby is four months old, he was first seen on July 27th last, he had been attended by three physicians and was in a very bad condition, weight 7 lbs. 5 oz., he had been a vomiting baby from birth. Breast milk had been given for two weeks, then Eagle brand condensed milk in high dilutions, (1 to 10 at two weeks) and later on an unknown combination of cow's milk was given.

At the time he was first seen the stools were loose, but there was severe crying at stool, the stools contained small white masses and were slimy. There was a violent redness immediately surrounding the anus but no intertrigo. Because of the marantic condition some maltose was added to the fat-free food now prescribed, which was as follows, proteids 1.6, fats 0.3, sugar 2.45, Mellin's food 4, daily quantity 36 to 40 ounces, calories 345, quotient 47 per pound.

One week later mother reported at the clinic, vomiting had ceased altogether, the child was very hungry and had lost one ounce, stools loose. No change was made in the mixture and 17 days later the child was brought in showing a gain of 16 ounces. No vomiting, stools loose.

An interesting fact in this case was now brought out, it was attempted to return to a modification of whole milk, the only change being the addition of 2.10% fat. Contrary to what was hoped for, the child was still incapable of handling the fat and promptly began to vomit. It was decided therefore to return to skim milk and to slightly increase the proteids. When seen on September 21st, the child had gained 38 ounces (i. e., since August 3rd) a period of 49 days, and was consuming 45 ounces of fat-free food daily, calories 793, quotient 84. He is now 6 months old and weighs 9 lbs. 6 oz.

I can not close without drawing attention to a case in this interesting group seen only yesterday, in which the apparent harmlessness of even a high proteid is seen where fat is absent from the milk.

This baby is only 8 weeks old, he weighs 6 lbs. 3 oz., cries a great deal, strains at stool and is constipated, stool exhibits pasty white curds, there is considerable vomiting. He was losing weight on a rational milk mixture containing 498 calories, a quotient of 79, although taking his milk with a ravenous appetite.

Because of the plan to put him on a fat-free milk, the proteids were raised to a little over 2. Sugar of milk was used to bring the sugar to 7, the calories being lowered to 372, quotient 52 as opposed to 79.

I concluded that if this child would gain on a fat-free milk of quotient 52 when he was losing on a milk mixture containing 2.2% of fat with a quotient of 79, that his case would offer strong evidence that the presence of the fat was interfering with the absorption of his food. After three days, he had gained 2 ounces.

4339 Washington Boul'd.

REPORT OF THE COMMITTEE ON THE MEDICAL EXAMINATION OF EMPLOYEES ON FARMS PRODUCING CERTIFIED MILK.*

By Wm. H. Park, M. D., Chairman.

First.—It should be ascertained whether any of the employees are in contact with persons suffering from any disease, and whether that is contagious. If so, employee must leave the house in which the disease is, or be excluded from the milking places.

Second.—The employee must be examined for any diseases of the skin. If a new employee comes to a farm, he should be examined for any disease of the skin which might have been contracted at the former farm, such as cow pox, and excluded until all danger of conveying the disease is past.

Third.—An employee should be asked whether he has ever had typhoid fever, as about 4 per cent. of those having had typhoid fever have the typhoid bacilli in the gall bladder for years, and may pass them at any time by the intestinal discharge and so convey them to the milk or other food. Examination should be made for the germs in any one having had the disease.

Fourth.—A careful examination should be made for symptoms of tuberculosis, either pulmonary or of the glands, and any one having it should not care for the milk.

Fifth.—The mental capacity of the employee should be carefully considered, and the general disposition.

Sixth.—When scarlet fever is known to be in the neighborhood, any one having a sore throat should be prohibited from handling the milk, as the sore throat might be that of scarlet fever.

This refers simply to the Medical Examination of Employees, not to the sanitary condition of the premises.

---

*Read at the Second Annual Meeting of the American Association of Medical Milk Commissioners, Chicago, Ill., June 1, 1908.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

STATED MEETING; HELD OCTOBER 16, 1908.

DR. C. OGILVY AND DR. GODFREY R. PISEK IN THE CHAIR.

This was a joint session with the Section on Orthopedic Surgery. The evening was devoted to a consideration of the paralyses in early life.

THE CAUSATIVE FACTORS OF THE PARALYSES OF EARLY LIFE.—Dr. Royal Storrs Haynes said that the paralyses of early life had as their primary causative factors lesions of the motor tract and that these lesions might occur at any point from the cortex to the muscles. While all these affections were interesting from a scientific point of view he would limit himself to the consideration of those which occurred most frequently and which resulted in the greatest number of cases of paralysis. These lesions may be due to congenital defects or malformations, to lack of development of the cortical cells, to injury to the tract from trauma, either from the pressure of hemorrhage or fluid or inflammatory exudate, or from the displacement of bone or the growth of neoplasms; to inflammation of the nervous tissue in the brain or spinal cord or peripheral nerves; to poisoning from bacterial toxines or chemical poisons; to degeneration of the nerve or muscle cells. These lesions might produce in children the clinical pictures of nearly all the nervous affections of adults in which paralysis was a symptom. Beginning with the periphery he considered first, primary muscular dystrophy in which the paralysis is due to the atrophy of the muscle fibers and the consequent loss of power in the muscle as a whole. In connection with this atrophy there is a deposition of fat which causes the pseudo-hypertrophy. There is no change in the nerves and the late response to Faradism is due to the loss of contractile muscular tissue and is not a reaction of degeneration. Paralysis from this affection occurs before the tenth year, most often in boys and has a tendency to heredity. The distribution may be of three types (a) of the face and shoulder girdle (Landouzy-Dejerine), (b) of the muscles of the back and arms (Erb's Juvenile type) (c) of the muscles of the back and lower extremities (Muscular pseudo-hypertrophy).

Obstetrical paralysis is paralysis of the peripheral nerves due to injury during labor. The seat of injury was commonly the junction of the fifth and sixth cervical nerves. The brachial plexus was exposed to pressure from the blade of the forceps, was liable to injury from traction on the head to deliver impacted shoulders, traction on the arm or pressure by the fingers in the supraclavicular fossae in the delivery of the aftercoming head. Facial paralysis and paralysis of the lower extremities occurred with great rarity from similar trauma.

Diphtheritic paralysis, the result of multiple neuritis due to the absorption of toxines, occurred in from five to 15 percent of all cases of diphtheria and is rare up to two years of age. This form of paralysis occurred in all types of the disease but was more common in severe cases, especially where antitoxin was not administered or administered late. The palate was first and oftenest affected, then muscles of accommodation, then upper and lower extremities. Paralysis of the pharynx, heart muscle and muscles of respiration might occur. The lesion consisted of a degeneration of the particular peripheral nerve supplying the paralyzed part. In long standing cases there was a marked change in the muscles themselves.

Paralysis might occur in from five to six percent of all cases of Pott's disease, when the usual site was in the upper and middle dorsal region where the canal is smallest and the fixation least efficient. It resulted from compression of the cord with interference to the blood and lymphatic circulation, increase of the connective tissue and degeneration of the nerve elements. The compression might be due to displacement of the bone but was usually due to breaking through into the canal of the tuberculous process in the vertebrae. Actual destruction of the cord by tuberculous process was rare, and even much compression might be recovered from. This form of paralysis might be caused by pressure on the spinal nerves before or just after their exit irrespective of injury to the cord proper.

Infantile spinal paralysis or poliomyelitis is the most common and important of the paralyses of infantile life. Out of a series of 2,028 cases in the Hospital for the Ruptured and Crippled, 75 percent were poliomyelitis, 20 percent were due to cerebral disease and only five percent covered all other types. This disease seemed to be an infection dependent upon the action of a specific micro-organism. The communicability of the disease was evident from the occurrence of epidemics, from the number of authenticated cases in the same family and from the development of the disease soon after exposure. The occurrence of gastro-intestinal disturbances at the outset seemed to point to the digestive tract as the portal of entry. The examination of the spinal fluid showed it to be almost uniformly clear and colorless, without cellular elements or with only a few mononuclear leucocytes. On culture it has been found sterile. The anatomical lesions were confined to the central nervous system, and occurred most markedly in the enlargements of the spinal cord. In cases dying early it seemed evident from the findings that the infection occurred first in the spinal fluid and the pia, and extended along the blood vessels to the ganglion cells. In the severest cases degeneration was found in the grey matter everywhere. The lesions occurring in cases dying sometime after the onset of the disease are sclerosis of the affected areas in the cord, degeneration of their peripheral nerves and the muscles. Infantile cerebral paralysis might be congenital or acquired, the former being the more frequent. The congenital cases might be due to causes within the uterus or to injury during labor. Syphilis is a doubtful cause. The anatomical lesions were in the nature of large defects, half of one or more than half of one or both hemispheres might be wanting. There might be defective development of the pyramidal cells. The congenital cases occurring at birth were due to meningeal hemorrhage and secondary changes, chronic meningo-encephalitis, sclerosis or the formation of cysts. Tedious labor or injuries during delivery were the most frequent causes of such hemorrhages. Cases of acquired cerebral paralysis were usually seen before the fifth year and are characteristically hemiplegias. They may follow traumatism or infectious diseases. Convulsions are regarded both as cause of paralysis and as evidence of its beginning. The primary lesions in these cases are hemorrhage, usually meningeal, embolism, thrombosis, chronic meningitis and encephalitis. The secondary lesions were the usual sclerosis and atrophy with degeneration of the pyramidal tract.

THE DIFFERENTIAL DIAGNOSIS OF THE PARALYSIS OCCURRING IN THE EARLY LIFE.—Dr. E. G. Zabriskie presented this paper in which he said that the correct diagnosis of paralysis in early life lay in the proper elicitation of the facts attending the onset, the character of the paralysis and, in some instances, the progress the disease had already made. The seat of the causative factor was the first important step to determine in differentiating the various forms of paralysis. It was often extremely difficult to differentiate central from peripheral lesions. Spasticity, which was a complex symptom was invariably dependent on degeneration or lack of development of the pyramidal tracts. Frequently there was no clonus present. Sachs and other writers considered the dorsal extension of the big toe as normal in children under two or four years of age. Among other manifestations of central involvement were ataxia, either of stationary or of muscular movements, the incoordination of the arms and the peculiar gait seen in cerebellar disease, intention tremor, and the various kinds of tonic and clonic spasms. Nearly all the other symptoms of paralysis might be met with in peripheral as well as central lesions and it was mostly by a consideration of the sum total of symptoms that one could arrive at a correct diagnosis. Reflexes and electrical reactions gave very little information. One might distinguish between peripheral and central manifestations to some extent by the condition of sensation. For instance, anaesthesia whether partial or complete must necessarily follow the cutaneous distribution of the affected nerve in peripheral conditions. Hyperaesthesia was widely distributed in peripheral lesions; while in central lesions, with the exception of poliomyelitis and meningitis, it was confined to a zone denoting the upper segmental limits of the disease process. The application of one's knowledge of the anatomy and physiology of the central nervous system alone served to aid one in distinguishing between spinal and cerebral lesions. Sometimes the entire diagnosis depended upon the time when the paralysis was first noticed, whether at birth or shortly after, whether it followed immediately or shortly after febrile states, convulsions or coma, or whether its development was so gradual as to pass unnoticed until the paralysis was quite pronounced. The distinction between mild cerebro-spinal meningitis and acute anterior poliomyelitis was sometimes very puzzling. Each of these conditions had its own features of well pronounced cases but in some instances the diagnosis had to be deferred until some progress had been made. Infantile cerebral palsies were usually diagnosed by their spastic character, diminished intelligence and manner of onset. They could only be confounded with birth palsies when the spasticity was so slight as to be overlooked and at a very early age. The group of atrophies was extremely difficult to determine. In most cases progressive muscular atrophy and chronic poliomyelitis were practically indistinguishable.

THE ELECTRICAL TREATMENT OF THE PARALYSES IN EARLY LIFE.—Dr. T. H. Romeiser said that there was much discussion as regards the treatment of paralyses by electro therapeutic measures. There was also discussion in regard to the form of electricity to be preferred especially relative to the three modalities in use, static, faradic and galvanic and their various modifications. Electricity alone was not very effective in the spastic paralyses. Very gratifying results have been obtained in the treatment of acute anterior poliomyelitis. The object of electrical treatment, if the nerve cells were destroyed, was essentially to stimulate those muscles which were cut off from the neural physiological influence in order to maintain their metabolism and nutrition. In most of his cases he used faradic and galvanic currents. He preferred galvanism to faradism. One should not begin electrical stimulation until inflammation in the cord had subsided. In acute poliomyelitis there was a greater degree of contraction of the paralyses muscles to the anode than to the kathode. The best results were obtained during the first four or six months and but little improvement was noted after the first year. Electricity alone had not been used in any of his cases of poliomyelitis. He thought that massage and properly graded exercises were of equal importance. There was a natural tendency to progressive recovery without any therapy, especially during the first few months. This made it difficult to say just what role electricity played. He believed, however, that the child gained strength more rapidly when under electrical treatment.

THE MECHANICAL TREATMENT OF THE PARALYSES OF EARLY LIFE.—Dr. Wisner R. Townsend presented this paper. He thought that it was evident to those connected with the clinic that those children improved more, gained more power, and were in every way in a better condition when mechanical care was given. Apparatus had been ordered during the eight months preceding April 1 on three days a week in the out-patient department of the Hospital for the Ruptured and Crippled for 66 patients for the prevention of drop-foot in 6 cases; genu-recurvatum in 25 cases; talipes calcaneous in 7 cases; talipes calcaneo-valgus in 2 cases, talipes equinus in 4; lateral curvature in 2; drop-wrist 1; weakness of abdominal muscles in 3; right valgus and left calcaneous in 1; right drop-foot and left valgus in 1; multiple deformities in 3; there were 38 males and 28 females. There were 25 patients under two years, 24 between two and four years, 8 over four years and nine whose ages were not given. The time intervening between the attack and the deformity was two days in one case of genu-recurvatum; one week in one case of genu-recurvatum; two days in one case of calcaneo-valgus. The average time after the attack until apparatus was applied was three months. Temporary apparatus was applied earlier when possible. He thought that few realized how often deformities followed poliomyelitis and how rapidly these deformities came on. Many different forms of apparatus were employed. Plaster of Paris splints were inexpensive and easily applied, but in dispensary work they soiled easily. If the bandage was heavy it was clumsy and if too light it might crack and allow the limb to be displaced. Braces of steel were simple and could be made to fit the varying age of the patient; if made without joints they could be made at a reasonable cost. Joints could not be used in the early treatment. By the time the first one was discarded one with motion was not needed. Dr. Townsend exhibited a splint that was in general use at the hospital and which had given great satisfaction.

THE SURGICAL TREATMENT OF THE PARALYSES OF EARLY LIFE.—Dr. R. H. Sayre presented this paper and was of the opinion that the number of cases of paralysis occurring in infancy and childhood which were amenable to surgical treatment was much smaller than those which were benefitted by mechanical treatment. However there was a certain number of cases which derived wonderful help from surgical intervention. If when a tissue was stretched to its utmost extent and point pressure applied to it, a reflex spasm was produced, the tissue had been elongated as far as it was possible to elongate it by stretching and if it was desired to make it permanently longer an operation must be done. This was a valuable guide in determining when to stretch and when to cut. In the majority of cases contracted muscles could be elongated by subcutaneous tenotomy. If the tendon was cut subcutaneously the deformity should be immediately corrected and if a proper dressing was applied there need be no fear of non-union of the tendons. If a distinct gap was felt between the ends this should be covered by a stout piece of adhesive plaster or some dressing firm enough to keep the bandages from occluding the gap. In the great majority of cases other methods are more complicated than subcutaneous tenotomy and are productive of no better results. In some instances as in contraction of the long flexors of the fingers, open operation of the forearm tendons is advisable. A number of operations have been suggested, but the best is that of splitting the tendon longitudinally, cutting the slit loose on each side and sliding the flaps on each other. In operating on the hamstrings open incision is advisable as some operators have mistaken the external Popliteal nerve for the biceps tendon. When operating by the open method on the knee he divided the tendons and closed the wound with sutures, making no effort at sliding the elongation. Tendon transference has been of great benefit in those cases of paralysis and would often enable a patient to dispense with apparatus. In order to be practical we must have a strong muscle whose force can be diverted and made to do the work of its paralyzed neighbor. Occasionally it is possible to develop the feeble muscle into a vigorous one by electricity, massage, etc., and then to operate. The flexor and the extensors of the forearm have been interchanged, and the sartorius and hamstring muscles sometimes one and sometimes the other have all been transplanted to the patella to overcome paralysis of the quadriceps extensor femoris with great success. As regards the results of nerve transplantation and nerve splicing he felt that the operation should be tried in suitable cases, but he did not feel that it had yet been shown that a nerve which had been paralyzed for a long time could be regenerated by splicing it to a live one. It was necessary in discussing the possibilities of nerve suture and nerve transplantation to recognize the different kinds of paralysis as we see them in young children. In brachial palsy of the Erb type due to overstretching of the nerve roots which results in rupture of the sheath, fibers and vessels of the nerves, from cicatrization of the resulting hemorrhage and torn sheath occurs forming a permanent obstruction to the transmission of nerve impulse. Where such cicatricial areas exist they must be removed or else the operation results in failure. The results of the immediate suture of nerves that have been divided accidentally and the bridging of defects where the nerves could not be approximated have given such brilliant results that it was to be expected that benefit might follow the removal of scar tissue and suture of nerve trunks in Erb's paralysis. However the conditions are different and one cannot rely upon getting as favorable results.

In regard to operations Dr. Sayre said that when a growing bone was compelled to bear weight while imperfectly supported it very frequently became deformed and in such cases operations upon the bones became necessary as well as upon the soft parts. When the extensor muscles of the thigh and leg are paralyzed it is often the case that after a club foot has been restored to its normal relation with the leg, it will be found to be everted forty-five to fifty degrees on account of a twist which has taken place at the knee so that the knee and ankle joints work no longer in the same place but at very marked angle to each other, and in such cases an osteotomy is necessary to bring the two into line. At other times a pronounced genu valgum results from the paralysis of the quadriceps femoris and an osteotomy or osteo classis of the femur is necessary to put the foot under the body and restore the centre of gravity. Operations have been of marked use in connection with dangle foot. Arthrodisis or the formation of an artificial ankylosis is of great use in many of these cases. It was by no means easy to produce artificial ankylosis and consequently many operations had been devised. The majority make an incision behind the outer malleolus running forward below it into the instep dividing the external lateral ligaments and dislocating the astragalus so as to gain access to the sides which are denuded of cartilage. In the great majority of cases it was necessary to obliterate the joint between the astragalus and oscalcis and many operators prefer therefore to remove the astragalus altogether. Goldthwait divides the fibula a few inches above the joint and does this also in order that the divided fibula may be more certainly brought in contact with astragalus. The front part of the foot was apt to be unstable in these cases unless the medio-tarsal articulation was also obliterated at the same time that the arthrodisis is affected at the ankle joint. In calcaneous the operation devised by Whitman has given most excellent results. The astragalus is removed and a thin section of bone cut from the outer surface of the oscalcis and cuboid. On the inner side the sustentaculum tali is cut away and the calcanic navicular ligament is partially separated from its attachments. The cartilage is then removed from the two malleolus and if necessary they are reshaped so as to permit of accurate adjustment. The foot is then displaced backward as far as possible so that the external malleolus may cover the calcaneo cuboid junction, while the inner is forced into the depression behind the navicular. The peronei tendons which are divided at the first stage of the operation are then attached to the insertion of the tendo Achilles and to the os calcis by strong silk sutures. The object of the removal of the astragalus is to secure stability and to prevent lateral deformity by placing the leg bones directly on the foot. The object of the backward displacement of the foot is to direct the weight upon its center and thus remove the adverse leverage which induces dorsal flexion.

DISCUSSION.

Dr. Henry Ling Taylor said that he would devote a few minutes at his disposal to a brief statement of his own views in the treatment of poliomyelitis. In the treatment of the acute attack it was exceedingly important to keep the patient quiet and in bed, and to refrain from meddlesome interference. Massage and electricity were contraindicated during the first month. Deformity could be prevented in at least nine-tenths of the cases by the application of suitable splints. The nutrition after the acute stage of the disease could be kept up by the use of the vibrator and dry heat. It was also very important to enable helpless children to walk by the aid of proper appliances; and to relieve instability and deforming strain in these, and also in the children who could walk, by orthopedic treatment. Protected locomotion was perhaps the best stimulus to nutrition. These means properly used, were, in his opinion, superior to electricity or massage. Every case not treated in this way might result in needless deformity.

Dr. Henry Koplik expressed himself as particularly interested in what had been said regarding the difficulties of making a differential diagnosis between the various forms of meningitis and polioencephalitis. As was well known it was necessary in some instances to have a case under observation for twenty-four hours or more before the diagnosis could be cleared up, although the diagnosis was not as difficult as at first appeared. He could not understand how three lumbar punctures could be made and yet no diagnosis result from the examination of the fluid. However, this sometimes happened. Dr. Townsend had asked why one did not try to prevent deformity, or to correct it when one treated a case of poliomyelitis. Dr. Koplik said that there was nothing more difficult to decide than the moment when these cases should be placed in the hands of the orthopedic surgeon. Many cases during the epidemic of 1907 were in the hospital and it was very difficult to decide when the surgeon should be called in to correct the deformity. Deformities sometimes occurred when the child was too sick for any operative procedure.

Dr. Sara Welt-Kakels discussed the paper from the standpoint of differential diagnosis; she mentioned that it might be difficult to differentiate a poliomyelitis anterior from a birth palsy of the upper extremity, but in this latter the musculus infraspinatus was mostly involved; it also was important to bear in mind the pseudo-paralyses which were dependent either upon lues or rachitis. She recalled one case of paralytic douloureux in a boy, three years old, seen in private practice during the epidemic of anterior poliomyelitis. The child could not move the left arm. It was learned that the nurse had the child out walking, leading him by the arm. The child stumbled and the nurse held him up by the arm. It was soon found that the child could not move the arm. Placing the member in a sling for a few days resulted in a cure.

Dr. Louis Curtis Ager said he believed that every physician who saw the patient early could prevent deformity in cases of anterio poliomyelitis in 95 per cent. of them. He should prevent the contraction of the muscles and should support the weakened muscles of the opposite side. In regard to diagnosis he said that a typical case could readily be diagnosed and in others the diagnosis was usually only a matter of time.

Dr. L. E. La Fetra said that Dr. Haynes had made a clear presentation of the causative factors as regards diagnosis. There frequently occurred cases that were difficult to diagnose even by the ablest. With regard to the treatment he thought that much could be done in the acute stage so far as electricity, massage and manipulation were concerned. A great deal could be done by hot baths and by the application of the spinal ice bag, or by counter-irritation to the spine with mustard and hot fomentations. This would relieve the pain from the spinal nerve roots. These pains were very marked during the recent epidemic, and there were many cases in which the use of massage was extremely painful. So far as the limbs were concerned there should be absolute rest. In most cases, he believed, that deformity could be prevented by the giving of proper treatment at once. It was possible in most cases to place the feet at right angles; this should be done at the beginning and the feet should be kept there.

Dr. Walter Lester Carr believed that much could be done in the early stages of anterior poliomyelitis to relieve pain and other symptoms. He began early a general orthopedic treatment by strapping with adhesive plaster to keep the weakened muscles in their proper position. Too often physicians failed to recognize the necessity for early and continued treatment and the cases passed from their hands to the care of orthopedic surgeons without having been given more than a general medicinal treatment. All such cases required a supervised management over a long period by both physician and surgeon.

Dr. William M. Lesznsky said he wished to emphasize one or two points, and the first was in regard to the correction of deformities; the second was in regard to the general management of the case. In the improvement of paretic muscles much more could be accomplished by the systematized practice of voluntary movement than by any form of electricity. If the muscles were completely paralyzed massage and electricity might develop the muscles while the undestroyed centers were undergoing regeneration. The difference between the application of the anode and cathode to the muscles was of little importance, so long as a muscle contracture could be obtained. It was not necessary to determine the classical reaction of degeneration as the loss of faradic irritability was, as a rule, sufficient.

Dr. Jacob Teschner said that in 1899 he published a paper in the Annals of Surgery giving the results obtainable in the paralytic deformities, and he cited one case of particular interest that had been under treatment for fourteen years, with electricity and massage, and he called attention to the fact that the use of electricity and massage was absolutely useless. The treatment should not be by apparatus and braces. In dealing with these paralysed limbs one should bear in mind that there existed a tendency to recovery, and if one placed the paralysed limb in a brace and confined the motion, he did not promote the muscles to develop. He said that he had treated many cases of infantile paralysis and deformities since 1896, and the worst deformities that he had seen resulted from the wearing of these braces. If the gentlemen would take a series of cases, irrespective of the amount of disability, and permit the children now wearing braces for from two, four, five or even ten years to get about and help themselves as best they could, after four weeks they would find that these patients were more helpful and in better condition than when they were wearing the braces.

Tenotomy as practiced by orthopedists generally was inadvisable because they placed the limb in plaster for at least four weeks. He wished to call attention to and to emphasize the statements made by him in a paper read in 1899 and published in the same year. In those cases operated upon, where tenotomy had been performed, he had insisted upon the full use of the operated limb as the ability of the patient permitted at the end of one week; after a fascictomy or tenotomy the child was permitted to walk about in his encasement on the fourth day. On the seventh day this was removed. Re-education and development by scientific gymnastics had much to do with the restoration of the functions of a paralysed limb, and experience taught that it was the only proper method of treating these cases.

Dr. Henry W. Frauenthal did not agree with the statement that mechanical massage was preferable to that given by trained and skilled hands. The skilled masseuse was far better able to perform active and passive massage than any machine.

Dr. E. G. Zabriskie believed they should avoid entanglements and long discussions regarding the palsies seen in the young.

Dr. T. H. Romeiser believed that he had emphasized in his paper that special resistance exercises were of greater value in these cases than the use of electricity alone, although electrotherapy was the subject of his paper. He took pains to instruct intelligent mothers in a series of special exercises for the child and with gratifying results. Whether the machine could do more than an intelligent mother, he could not say.

Dr. Wisner R. Townsend, in closing the discussion, said he could not understand the position assumed by some with regard to the question of deformities. The orthopedic surgeons wanted the orthopedic work done by the general practitioner; he should prevent the deformities by appropriate treatment begun early. The orthopedic surgeons saw these cases because the families called them in to cure deformities that should have been prevented.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Section on Pediatrics.

MEETING HELD IN CONJUNCTION WITH THE BROOKLYN SOCIETY OF NEUROLOGY, OCT. 29, 1908.

DR. A. D. SMITH, CHAIRMAN.

I. EXPERIENCES WITH THE FLEXNER SERUM IN EPIDEMIC CEREBRO-SPINAL MENINGITIS.—By Chas. H. Dunn, M. D., of Boston, Mass. Dr. Dunn reported a series of 56 consecutive cases of epidemic cerebro-spinal meningitis treated by the serum prepared by Dr. Flexner of the Rockefeller Institute. This series includes only cases in which the diplococcus intracellularis was found in the spinal fluid. All types of cases are included in the series; cases in which the serum was given very early, cases in which it was given late in the disease, fulminating cases, mild cases, and cases of average severity. Of the 56 cases, 41 recovered (73½%) and 15 died (26½%). Of the 41 who recovered, 3 had sequelae; one was left blind, one deaf, and one both blind and deaf.

About 30 of the cases were patients at the Children's Hospital in Boston. In this hospital, the records show that there have been about 30 cases of cerebro-spinal meningitis each year for the past ten years. The mortality each year was about 60% to 80% before the serum was used. Many other forms of treatment had been tried during these ten years, such as (1) diphtheria antitoxin, (2) vaccine from the diplococcus intracellularis, (which was used in 1907 with 80% deaths) and (3) repeated lumbar punctures.

The 56 cases reported may be divided as follows: (1) Fulminating cases, in which complete unconsciousness comes within a few hours of the onset, (2) severe cases, not so severe as the preceding, but accompanied by delirium, marked rigidity and great restlessness, (3) the common type, with headache, stiff neck, Kernig's sign, some restlessness and hyperaesthesia, and a fairly clear mental condition, (4) mild cases, with fever, and some rigidity, but few subjective symptoms, (5) late chronic cases, which have continued for six or seven weeks, presenting a normal temperature and more or less complete unconsciousness.

Of the 5 fulminating cases, 3 made remarkable recoveries immediately after receiving the serum, though they appeared to be hopeless; the other two died.

Of the severe cases, there were 13; of these, 8 recovered and 5 died.

Of the common type, out of 23 cases, 21 recovered and 2 died.

Of the mild cases, there were 8 recoveries and no deaths.

Of the late chronic cases, of a total of seven, there was one recovery and 6 deaths.

The clinical effects of the serum were as follows: After a dose of the serum, all the cases which recovered, and many of those which finally died, showed a marked change in symptoms; unconsciousness was changed to consciousness, the headache, hyperaesthesia and other subjective symptoms were quickly relieved. The objective symptoms, such as rigidity of the neck and Kernig's sign, disappeared much more slowly than the subjective symptoms. The temperature dropped usually in twelve hours; some cases ended abruptly by crisis, (a result which is never seen in cases not treated by the serum, even though recovery takes place.) In other cases, the temperature rose again after the first drop, then subsided by lysis. In still other cases, there was no immediate effect on the temperature, but it subsided slowly after a few days.

The length of the disease was shortened by the use of the serum. Instead of lasting several weeks, as was the case before the serum was used, in 27 of the 41 recoveries, all symptoms disappeared within one week; 8 lasted into the second week; 3 into the third week; and 3 cases, which ultimately recovered, lasted over 3 weeks.

Sequelae appeared to be less common in cases treated by the serum. In this series of cases, not one was left with any paralysis, nor with post meningeal idiocy, although some of the cases were less than fourteen weeks old. Both the cases which were left blind, were blind when first seen by Dr. Dunn.

There was a striking effect on the spinal fluid after the injections. In cases which showed a great many diplococci, both intra and extra-cellular, in the fluid withdrawn at the time of the first injection, there were few organisms, all intracellular, at the time of the second lumbar puncture. At the third puncture, there were still fewer organisms, and at the fourth puncture, none at all or very few.

An analysis of the 15 fatal cases, shows that 6 were of the late chronic type, with unconsciousness, normal temperature, stiff neck and usually inability to swallow. These cases had lasted from 6 to 7 weeks when first injected with the serum, but organisms were still present in the spinal fluid. Such cases as these do not offer much hope; one recovered, receiving the first dose of serum on the 50th day of the disease, when he was semiconscious, with rigid neck and normal temperature; organisms were still present in the fluid. This case received two doses of serum; improvement began at once, and recovery took place. Two other fatal cases were pulseless, with stertorous breathing, when first injected; death occurred in a few hours. One other case, included among the fatalities, died of broncho-pneumonia, after the meningeal symptoms had disappeared. The remaining six fatal cases at first improved and the organism disappeared from the fluid. In spite of this, they relapsed and died.

In giving the serum, give plenty of it; there is very little danger in giving more than the quantity of the fluid withdrawn. Dr. Dunn always gives 30 c.c. at a dose, and somteimes 45 c.c. If the symptoms are bad, and if they do not improve, give the serum oftener than every 24 hours. When a relapse appears, give several more doses of the serum. The routine treatment at present is four doses of 30 c.c. each on four successive days, no matter how great or how slight the improvement may be during that time. This quantity is given even if much less spinal fluid is withdrawn. In all suspected cases, be ready to inject the serum at the first lumbar puncture. If the spinal fluid is at all cloudy, give the serum without waiting to examine the fluid. If some organism other than the meningococcus is present, the serum will do no harm, while valuable time is lost, if the administration of the serum is delayed in order to examine the fluid. If, however, the meningococcus is not found in the fluid, it is useless to continue with the serum treatment. After giving the serum for four successive days, wait five or six days; if symptoms are still present, give four more doses.

Dr. Flexner of Manhattan opened the discussion of Dr. Dunn's paper. He paid a tribute to Dr. Dunn for the careful, painstaking work he had done in and around Boston, in using the serum. Dr. Flexner thought that the striking change in the course and ultimate outcome of cases treated by the serum, as compared with the cases treated in exactly the same way, with merely the omission of the serum, showed that the results could be attributed to the serum alone. He said that he realized that the best test of the serum would come in an epidemic. In this country, there has been no epidemic since the serum was first used, but in the British Isles the serum has been used during an epidemic with excellent and striking results, as compared with similar epidemics in the past. In Belfast, an epidemic had arisen. Many cases of all types were treated by the serum, with 30% mortality. If cases dying in the first twenty-four hours are excluded, the mortality was only 20%. The cases not treated with the serum showed a mortality of 80%.

Dr. Flexner said that it was difficult to explain cases which resisted the serum even though the organisms disappeared. He said that we judge of the disappearance of the organisms by examining the fluid obtained from the lumbar region of the cord; it is possible that the organisms develop in the central nervous system, without necessarily showing in the lumbar fluid.

In a recent case he found the organisms in the cerebral ventricles at autopsy, though none could be found in the fluid removed by lumbar puncture. He believes in draining off as much fluid as possible and in injecting plenty of serum; also in raising the foot of the bed to favor the distribution of the serum to the brain.

Dr. Bartley asked how the serum was prepared.

Dr. Browning asked if there was any use in giving the serum subcutaneously, inasmuch as the infection was systemic, and the organisms were present in the herpetic vesicles.

Dr. Beck asked the technique of giving the serum, and where the serum could be obtained.

Dr. Flexner said that the serum was made in horses; they are injected first with extracts of the diplococcus, then with dead cultures, then with living cultures. The horse is very susceptible to the infection, and it takes six months to immunize one. The serum has not been satisfactorily standardized as yet. It is given away by the Rockefeller Institute, to physicians who are considered capable to use it with the care necessary. Unless great care is taken, the spinal cord can be infected with other organisms, rendering recovery hopeless. Subcutaneous and intravenous injections are useless; the serum must be applied in a concentrated form to the seat of the disease.

Dr. Dunn said that he used a 45 c.c. syringe; that he introduced his needle at a point opposite the highest point of the crest of the ilium; if he failed to obtain fluid here, he went in a space higher or lower; he drew off all the fluid possible by letting it drip from the needle, sitting the patient up if the flow was scanty; then he attached his syringe, and put in 30 c.c. and even more if it went in readily.

THE CHICAGO PEDIATRIC SOCIETY.

STATED MEETING, OCT. 20, 1908.

I. A. ABT, PRESIDENT, IN THE CHAIR.

The Chicago Pediatric Society turned the first meeting of the year into a memorial to its founder, Doctor John C. Cook, who died March 21, 1908. The president in eulogy of Doctor Cook spoke of him as an honest man, loving his profession, making no pretenses nor condoning them in others.

PRESIDENT'S ADDRESS.

The president confined his remarks to the progress of pediatric learning which may be said to have arisen early in the nineteenth century, when Billard (1828) in France began to interpret clinical findings on pathological observations; Rilliet and Barthez wrote the first systematic treatise on the diseases of children. Among the earliest contributions to pediatric literature are to be mentioned that of Bednar on diseases of the new-born and nurslings and that of Ritter on the skin lesions of the new-born.

In 1837, the St. Ann Children's Hospital was established and soon afforded a vast amount of material which was utilized by Frank Mayer, the first professor of Diseases of Children in Vienna.

Charles West was the earliest systematic teacher of pediatrics in England. With the foundling of the Children's Hospital in Great Ormond Street, facilities for study were immensely increased.

Perhaps no contribution to the subject of pediatrics was weightier than Gerhardt's Handbuch der Kinderheilkunde for which Henke, Karl von Vierordt, Jacobi, Pfeiffer, Baginsky and Widerhofer all composed monographs.

To Jacobi belongs the credit of bringing the results of foreign research within our reach; and of making original investigations and observations, while his contributions constantly aroused many workers to enthusiastic effort.

As matters stand now, clinical observations have been thoroughly recorded, but problems in the physiology of infancy and childhood should be worked out and made the subject of theses and essays. Chemistry, psychology, pedagogy and physiology are branches along which work may be done.

What medicine, however, has needed for a long time is coordination. The great thinker in chemistry or the genius in physiology forgets the practical side of their departments, and the clinician hesitates to carry his problem to the laboratory door. Cooperation in scientific research is the thing demanded.

DR. COTTON READ THE "JOHN C. COOK MEMORIAL."

Dr. John C. Cook was born in Union County, February 3, 1856, and died in Chicago, March 21, 1908. His parents were poor and the boy saw but little of them after his third year, when he was brought by his grandfather to Union and Saline Counties, Illinois. He lived among different families until he was eight years old; when he was nine years old his father was drowned and the following year his mother died. All this time the child had been neglected and unhappy; he grew reticent and found his pleasure in nature. His remarkable knowledge of birds, animals, insects, flowers, plants, and trees, which in later life was a source of pleasure and surprise to his associates, undoubtedly had its foundation laid in these years.

At thirteen, John went to live in Cobden with the Holcombs, a childless couple who had taken a fancy to the lad. The kindness so needed and so grateful, of the foster mother he never forgot and repaid manyfold in his care and solicitude for her until the day of her death two years ago. The boy attended school as constantly as possible, completing a somewhat limited high school course, and was encouraged by Mr. Holcomb, who was enough interested in the youth to supervise his studies. In his nature studies the youth showed great proficiency and he became greatly interested in devising processes for preserving the colors and tints of flowers and plants, in grafting, budding, and the crossing of species. Southern Illinois stills holds some of his botanical and entomological collections. It is not surprising that such a nature should have been early drawn to the study of anatomy and physiology. A friend, Dr. Scharsdale of Saratoga Springs, Union County, first told the young student that he was cut out for a doctor and urged him to study medicine. So with his small savings, every dollar earned by toil and self denial, John Cook came to Chicago and matriculated at the Northwestern Medical School, where he was graduated in 1880. His early field of practice lay about Kensington and Pullman and he soon began work in the Free Dispensary of his Alma Mater in the Department of Children's Diseases. Dr. Cook considered his work in that department the result of mere accident, but those who knew him best regard it as an example of natural selection, because the work was such as his sympathetic nature and thoroughly trained habits of observation especially fitted him for. His method of approach to a nervous, diffident, or willful child was wonderfully ingenious and tactful. It was so naturally simple that few children could resist the invitation to confidence.

As an organizer, however, Dr. Cook's force is especially apparent. By his tireless, quiet, persistent energy he founded the Chicago Pediatric Society in the fall of 1895. He founded also the Jackson Park Sanitarium and the South Side Dispensary for sick children. The Chicago Medical Club first met at his home and was largely inspired by his genius. This organization, since merged with another to form the Chicago Physicians' Club, is a unique and permanent body of which the profession is justly proud.

TWO CASES OF ACUTE MENINGITIS TREATED WITH THE FLEXNER SERUM.

Dr. J. J. Gill reported two cases of acute meningitis treated with the Flexner serum, the first being that of a girl four years old. About the middle of June she had a slight macular rash which lasted several days, and was followed by a more or less persistent headache. The headache was especially severe on the tenth and seventeenth of July. She vomited on the eighteenth and twentieth and when seen by the writer for the first time on the twentieth was delirious. During the night she had convulsions. Examination of the urine showed albumin, granular casts and pus cells.

The child continued restless but was rational at times and the pupils reacted sluggishly to light. On the twenty-fifth there were twitching of the left side of the face, a tache cerebrale, and Kernig's sign; the faeces and urine passed involuntarily. Lumbar puncture was performed July twenty-seventh and there was withdrawn 30 c. c. of clear fluid which contained a few lymphocytes and an occasional non-Gram staining diplococcus and a few Gram staining extra cellular staining diplococci. Growth in blood serum gave a culture of non-Gram staining diplococci. Lumbar puncture was performed again on the twenty-eight and thirtieth and each time 30 c. c. of the Flexner serum injected into the spinal canal. On the thirty-first a hemiplegia of the left side developed. The child seemed to rest better after the injections but gradually grew weaker and died August seventh.

The second case was that of a year old boy who had been perfectly well until March 26, 1908, when he vomited and had convulsions. He was seen by the writer July 29, 1908, at the Jackson Park Sanitarium four months after the onset of the disease. Inability to retain food, constipation, and marked muscular rigidity were noted; the temperature was 101, pulse 140, respirations 28. During the next two days the child had several convulsions and vomiting spells. Lumbar puncture was performed August 30, and 30 c. c. of slightly turbid fluid withdrawn. This contained 630 leucocytes per m. m., giving a differential count of lymphocytes 19 per cent., polymorphonuclears 81 per cent. Two to five pairs of Weichselbaum's diplococci were found in the centrifuged fluid. After a second lumbar puncture and the injection of fifteen c. c. of Flexner's serum the temperature fell to normal. The next day the temperature again rose to 103.4 and remained more or less elevated. The child died August 18, 1908.

The writer emphasizes the facts that in meningitis lumbar puncture should always be performed early and Flexner's serum immediately injected without delay for the laboratory report.

Dr. Churchill opened the discussion on Dr. Gill's paper, saying that interest now centers in the Flexner meningococcic serum. He asked especially to discuss two things. The first necessity is for those likely to have cases of this kind to learn how to perform a lumbar puncture, which is after all not difficult. The practitioner should not, however, make the examination of the spinal fluid; that is left to the laboratory man.

The next point is the unfortunate result of the two cases reported. Tardiness in administering the serum prevents these two cases from being a fair test. The serum must be used as early as possible; like anti-toxin in diphtheria, the earlier the serum is given, the better the results; and yet there are a few cases with good results reported when the serum was given after an illness of five or six weeks.

At the last meeting of the American Pediatric Society, where Flexner read his paper, it was practically the consensus of opinion that 30 c. c. should be injected into the spinal canal. Furthermore the injection should be repeated within twenty-four hours at the latest and, if the first dose is not effective, it can be repeated within twelve or eighteen hours after the first injection, with an increase of the dose to forty or fifty cubic centimeters. It seems unfortunate that some physicians administer such small doses.

As to the mortality rate under the use of the serum, Flexner has found it 50 per cent. lower. Out of 400 cases, regardless of age, the mortality was 25 per cent., whereas heretofore it was from 75 to 80 per cent. When it comes to an analysis, the mortality is very high at early life and falls lower and lower as the age increases.

One point in Dr. Gill's paper has been repeatedly observed. the change in appearance of the spinal fluid after one, two, or three doses of serum, the fluid becoming clearer and microscopically the diplococci disappearing.

The chief points to be emphasized are the great importance and necessity of performing a lumbar puncture and the administration of serum very early in the disease and in large enough amounts, to be repeated with sufficient frequency.

Dr. Butler said that the serum is undoubtedly the best thing ever introduced for these cases. The earlier its administration, the more favorable the result.

Dr. Cotton said that lumbar puncture was practiced a number of years ago and relieved some urgent symptoms. Formerly introducing fresh serum in a specific form or a fresh blood serum, did not meet with much success. Now that this specific serum of Flexner's is prevailing, Cotton inquires whether the amount of fluid withdrawn by the puncture bears any relation to the amount of fluid injected. In other words, if 15 c. c. of fluid should be withdrawn by the lumbar puncture, should 30 c. c. be injected? Is there anything in the old idea of spinal pressure to deter from raising that pressure by increasing the amount of fluid?

Dr. Hess asked Dr. Churchill whether he always warmed the serum before administering it.

Dr. Lackner said that in a case observed by him the serum was injected without warming and produced considerable pain and he questioned whether the temperature produced the pain.

Dr. Churchill found it impossible to answer Dr. Cotton's question regarding pressure as that is one of the things not yet determined. When the spinal fluid has been withdrawn, large amounts have been injected. It seems that careful watching of results will decide the amount to be prescribed. Certainly so far as present knowledge goes, it is better to give the patient the benefit of the doubt by administering the full amount, even if by so doing spinal pressure is increased. This Dr. Churchill regards as the general opinion.

In closing the discussion Dr. Gill said he always warmed the serum on a hot water bottle and as for the amount of pressure, he sometimes injected more serum than was withdrawn.

THE BETHESDA PEDIATRIC SOCIETY.

ST. LOUIS, MO.

MEETING HELD SEPT. 25, 1908.

EXAMINATIONS OF THE STOOLS OF INFANTS, BY JOHN ZAHORSKY, M. D. (see page 760).

OBSERVATIONS ON FAT INCAPACITY IN YOUNG INFANTS, BY W. S. BLEYER, M. D. (see page 764).

DISCUSSION OF DR. ZAHORSKY'S ADDRESS AND DR. BLEYER'S PAPER.—Dr. Tuttle stated that both of these talks seem to point towards the view recently taken by the Breslau School, we must, however, be cautious not to jump at conclusions, as Dr. Zahorsky has said he still expects to demonstrate that some of these hard curds in the stools may be casein curds. Dr. Tuttle said that it had occurred to him that the solid masses shown in Dr. Zahorsky's specimens are casein particles caught in soaps. The whole subject is in its infancy and needs investigation.

As regards Dr. Bleyer's paper, the fact of colic occurring especially in breast-fed babies due to fat indigestion is a new line of investigation. Dr. Fisch had made many examinations for him of the breast milk in these cases and usually submitted the same reports, fats normal and proteids high, and treatment along these lines had been satisfactory.

Dr. Barker stated that Dr. Zahorsky's work gives encouragement that we can all of us undertake investigation along these lines, his work will probably be confirmed, we are coming to accept the fact that fats are more often offenders than proteids.

What Dr. Bleyer had said in confirmation of Dr. Zahorsky's work, he had also observed to be true in his practice. He would like Dr. Zahorsky to explain in what way the calcium-soap curds can become the cause of constipation.

Dr. Gordon said that he had enjoyed the papers and that they showed that a good deal of scientific work had been done in them. The tendency to believe that the fats are the cause of constipation is certainly contrary to what we have been taught.

Dr. Fisch discussed various methods of differentiating between caseins and fats in stools. It can more easily be determined that the mass is casein by staining for fat, the stains reveal fatty-acid crystals as well as fats, as also the salts of calcium and magnesium stain in the same way. Casein will perfectly decolorize while fat retains the stain. He uses chiefly Scharlach red in 70% alcohol and concentrates the dye. It is best to first harden the stool in formol.

Dr. Zahorsky was glad to hear this from Dr. Fisch and intended to make use of it in his further work.

As for Dr. Bleyer's paper he said that he had been watching these disturbances from fat and finds that young babies do much better if fat is reduced, it is however also true that a reduction of proteids is at times accompanied by improvement. It seems that where babies have weak digestive power they can get along with either one but can not handle both together.

Dr. Zahorsky discussed the subject of acidosis in connection with fat incapacity and pointed out that by excluding fats we do not give acids to rob the system, the disturbance here is also largely of appropriation as well as of digestion.

Concerning the casein coagula, he believed that they are found in the stools at times and he will attempt to demonstrate them to the Society some time in the future. The study of the stool is intimately connected with a knowledge of digestion and we should gradually extend our knowledge in this direction. As soon as all clinicians realize that casein coagula do appear in the stool very rarely, we will have less attention given to casein indigestion.

The clinical experience of American pediatrists that a fairly high percentage of fat may be given with a low percentage of proteids may be entirely harmonized with the modern theory of fat indigestion. After all, the difficulty seems to lie in the presence of some calcium salts or compounds which, when present, unite with the fatty acid and produce insoluble soaps. A very dilute proteid solution also has very little of these calcium compounds and may account for our success.

Dr. Bleyer stated that his examinations of breast milk had been made at various times of the day and that he would feel more certain of his results had it been possible to make the fat determinations of completely emptied breasts from entire days' output. Such high percentages as he had found are probably not present throughout the day in any case. More recent work, however, has shown that the fat percentage in breast milk is much higher than we have supposed.

He differed with Dr. Gordon as to the statement that breast milk contains higher proteids than the usual modifications of cows' milk, such is not usually the case.

As to Dr. Barker's question as to how constipation can be caused by high fats, Dr. Bleyer said that it seemed to be due to the formation of hard, absolutely insoluble soaps produced by the union of the calcium of the casein with the fatty acids, so that the effect of citrate of soda in constipation is to produce a citrate of calcium and so leave the fatty acids to form normal, soft, soluble soaps of sodium and potassium. The crux of the question does not lie in the fats alone, but, as Dr. Zahorsky has pointed out in the relation of fats to proteids. Naturally therefore in the absence of fats this interference with proteids will not exist. Dr. Bleyer had not seen many disturbances even in young infants where high proteids were given provided the fat was kept out.

A. S. BLEYER, Sec'y.

PEDIATRICS

FREDERIC W. LOUGHRAN, M. D., Editor

Published Monthly by F. M. Crossett Co., Inc., Burlington, Vt., and 30 West 33rd St., New York.
Telephone, 781 Madison.
Editorial Office: 742 Prospect Avenue, New York City.
Telephone, 607 Melrose.
FREDERICK M. CROSSETT, President and Treasurer.
WILLIAM J. HOLMES, Vice-President.

COLLABORATORS.

William J. Butler, M. D., Chicago, Ill.
Henry L. Coit, M. D., Newark, N. J.
Alfred C. Cotton, M. D., Chicago, Ill.
Theodore J. Elterich, M. D., Pittsburg, Pa.
LeGrand Kerr, M. D., Brooklyn, N. Y.
Walter G. Murphy, M. D., Hartford, Conn.
Meyer L. Rhein, M. D., D. D. S.. New York, N. Y.
J. Ross Snyder, M. D., Birmingham, Ala.
Henry Enos Tuley, M. D., Louisville, Ky.
Charlton Wallace, M. D., New York, N. Y.
William W. Butterworth, M. D., New Orleans, La.
Thos. D. Coleman, M. D., Augusta, Ga.
Charles Douglas, M. D., Detroit, Mich.
William C. Hollopeter, M. D., Philadelphia, Pa.
H. M. McClanahan, M. D., Omaha, Neb.
John B. Rae, M. D., New York, N. Y.
Henry L. K. Shaw, M. D., Albany, N. Y.
Parker Syms, M. D., New York, N. Y.
James W. Van Derslice, M. D., Chicago, Ill.
George M. Wells, M. D., Portland, Ore.

EDITORIAL.

EDITORIAL ANNOUNCEMENT.

The Editor takes great pleasure in stating that with this issue, Pediatrics will publish monthly the full proceedings and papers of "The Chicago Pediatric Society," Chicago, Ill., and "The Bethesda Pediatric Society," St. Louis, Mo.

During the past year "Pediatrics" has published the proceedings of the Pediatric Sections of the New York Academy of Medicine and The Kings County Medical Society as well as the "American Pediatric Society"; "The Association of American Teachers of the Diseases of Children," and "The American Association of Medical Milk Commissions."

These proceedings will also be continued for the ensuing year.

INDEX FOR 1908.

The index for Vol. XX, 1908, will be found in the January issue.

ABSTRACTS.

"Central Journal" (for Diseases of the Digestive Organs and for Diseases due to Defective Assimilation).— Dr. J. Silverstein, Vienna, says: Undoubtedly among all medical products which are most difficult to prepare in a pleasant palatable form, certain fatty substances and essential oils, as well as tar products must rank foremost.

Being those which are most frequently used, we would mention more especially, Castor Oil, Cod Liver Oil, Creosote, Oil of Santal, etc.

The reason why the oils are so objectionable both as regards taste and smell, is a question of their physical properties, that is to say, due to their consistency. The oily substances distribute themselves in extremely thin layers over the mucous membranes of the palate and the tongue, although on the other hand, penetrating readily through the epithelial covering.

It therefore becomes impossible to remove them by making an effort at swallowing, or by rubbing the tongue against the palate, nor is the saliva capable of dissolving them, so that it is impossible to remove them in that manner either.

Consequently their stimulating action on the nerve terminals of the organ of taste is a prolonged one.

Numerous attempts have been made up to the present moment by pharmaceutical experts for the purpose of removing this difficulty, but without leading to any satisfactory result so far.

It is only of late that means have been devised for presenting these oils in a highly concentrated for, and in the shape of powder, the constituent with which they are mixed, consisting chiefly of Magnesia. The name of "Siccols" has been given to these preparations which are fine and perfectly dry powders, from which every trace of objectionable flavor or odor has been eliminated.

They can easily be mixed with a little water, when they must be stirred till they form an emulsion.

"Ricinis-Siccol"—(Castor Oil in Powder) (the German equivalent for Castor-Lax) is a white powder, containing about 50% of Castor Oil. It cannot be dissolved in water, but if mixed with the latter forms an emulsion and even if left standing for a considerable time, the oil does not float on top.

It is in this latter form, i. e., as an emulsion that the remedy is easiest to take, and it will be found that both children and adults, males and females, will take it readily and without the slightest objection. So far as the correct effective doses are concerned my experience has been that this is just as different according to the individual, as is the case with Castor Oil itself.

Each single dose varies from a teaspoonful to a tablespoonful, but can, if required, be repeated every hour. Contrary to what I had expected I have found, in this connection, that smaller doses of this preparation are mostly attended by the desired effect, than is the case with the pure oil, whereas, on the other hand, the medicine usually took effect somewhat later. In the case of Castor Oil, it takes from two to at the most six hours before stools result, whereas, in the case of Castor Oil Powder this is not the case till from four to twelve hours later.

The majority of cases, however, in which an aperient is indicated, are cases of chronic constipation. As, in these cases, it will be necessary for the patient to take the aperient frequently for considerable periods, it is important that the action should not be attended by any irritating effect on the bowels. Among the aperients which irritate the bowel least of all and yet are reliable in their action, Castor Oil ranks foremost.

This is, however, more especially the case, if it is taken in the form of Ricinis-Siccol (Castor-Lax). Its use is mostly followed by one soft stool only, in which it differs from Castor Oil which is mostly attended by repeated stools resembling diarrhoea.

In the case of aged people who are frequently constipated, for a week and even a fortnight at a time, stools will ensue and unpleasant complications be avoided if Ricinis-Siccol (Castor-Lax) be taken regularly. In general, what constituted the value of Ricinis-Siccol (Castor-Lax) is its exceedingly mild action and the complete absence of all taste and smell.

The Channels of Entrance of Tuberculosis.—Calmette (Presse Medicale, October, 1907), at the sixth conference on Tuberculosis, at Vienna last September, after criticising the experiments of Küss and Findel on aërial communication, summed up the results of his own work as follows:—1. The contagion of tuberculosis cannot be experimentally effected through the respiratory tract except with the greatest difficulty, by making animals inhale tuberculous products or cultures in a state of fine spray. The inhalation of dry powders also only exceptionally succeeds in effecting contagion. It must therefore be admitted that dust contaminated with dry bacilli does not play any important part in natural infection. 2. The ingestion of virulent tuberculous products or of cultures in the state of a fluid emulsion is constantly effectual in producing tuberculosis in all kinds of susceptible animals. The bacilli can then be absorbed through the intestinal mucous membrane without producing any lesion by their passage; they are carried by the chyle to the mesenteric glands; thence they are frequently carried by phagocytic leucocytes into the lymph current of the thoracic duct and thence distributed in the blood stream. The pulmonary capillaries are most prone to become the seat of the first tubercular lesions, hence the extreme frequency of pulmonary tuberculosis in relation to other localisations of hæmatic origin.

Some Observations on the Use of Forceps and Version from the Standpoint of the Child—with Remarks on Caesarian Section and Hebotomy.— (Samuel Wyllis Bandler, M. D., International Journal of Surgery, May, 1908). It is asserted by B. Sachs that subnormal or pathological mental development in the child may be due to the long-continued pressure of protracted labor. After the head has reached the pelvic floor, the application of forceps, if little or no progress be made, saves hours of useless labor. There is no wisdom in waiting until the patient is worn out before resorting to art. The external soft parts sometimes offer resistance that may necessitate low forceps. The old rule—Cæsarian section if the obstacles are absolute, craniotomy if the mother is in danger—tended to force the section, thereby giving the child a better chance, while lesser degrees of pelvic contraction lent encouragement to the performance of craniotomy. These latter cases are now-a-days saved by Cæsarian section or hebotomy.

A Cæsarian section would be indicated in the following conditions: (1) Atresia of the vagina; (2) carcinoma of the cervix; (3) whenever rapid delivery means the saving of the child; (4) eclampsia; (5) some cases of placenta previa centralis; (6) justo-minor pelvis; (7) flattened rachitic pelvis. The writer maintains that Cæsarian section is often more advisable than either high forceps or version, particularly in those cases where the true conjugate is from 8 to 9½ cm. The application of high forceps under any circumstances is a dangerous operation, and should never be tried for a period longer than fifteen minutes above the brim.

The vaginal Cæsarian section is indicated in: (1) Carcinoma, myoma, rigidity or stenosis of the cervix; (2) saccular dilatation of the lower uterine segment; (3) diseases of the lung, heart or kidney, which cause a dangerous condition in the mother; (4) any condition of the mother which renders her moribund. The author of the paper makes the statement that the operation is practically free from danger, and that Veit in thirty-three cases of eclampsia has performed it with a loss of but one case. He also says that hebotomy has totally displaced symphysiotomy. (It may be parenthetically remarked that others who have had an opportunity to note the consequences following upon hebotomy, hebosteotomy or pubotomy, all of which are synonymous, speak of the operation as damnable). It widens all the diameters of the pelvis by 1 cm. "Combined with the Walcher position, plus version, plus pressure on the head, will bring many a sound living child into the world."

BOOK REVIEWS.

COMPENDIUM OF THE DISEASES OF CHILDREN.—By Dr. Apert, hospital physician of Paris; with an introduction upon the clinical examination of children by Prof. Marfan. J. B. Bailliere et fils, Paris. Price 10 fr.

This very handy little volume of the Gilbert-Fournier Medical series will be found of real practical value to the teacher of pediatrics in this country, as well as to the student and general practitioner. The concise epitome of the special anatomy and physiology of the child, which introduces each chapter, will be of great service to the student in understanding the symptoms of the diseases under discussion.

Milk modification receives scanty attention, as we should expected in a book by a pupil of Marfan and Budin. The author states that the new-born infant can digest whole cows' milk perfectly well but that for a short time it is advisable to dilute it one-third with sugar water. It is however a great satisfaction to note that the advantages of clean raw milk over sterilized milk are frankly admitted. In the discussion of tuberculosis Dr. Apert takes the ground that cows' milk is very rarely a carrier of the disease.

The brief discussion of infantile spinal paralysis is remarkably concise and is more in keeping with the conditions noted in the recent New York epidemic than is the case in most textbooks.

Finally the book itself is a real joy to the bibliophile. Many American publishers might learn something to their advantage from its neat flexible covers, its clear type and illustrations, and its strong binding.

SUBSCRIPTION: $2.00 A YEAR; 20 CENTS A COPY. Postage Free to all Subscribers in the United States, Mexico, Hawaii, Cuba, Porto Rico, the Philippines, Guam and Tutuila, Samoa. All other countries $2.50 a year.

ADVERTISING RATES will be furnished on Application.

Application made for entry as Second class matter at the Burlington Post Office.

ORIGINAL PAPERS.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. Brief clinical papers (2,000 words or less) are especially valued.

ILLUSTRATIONS, such as half-tones, zinc etchings, etc., as in the judgment of the editor are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

REPRINTS (100) of Original Papers will be furnished gratis to authors making the request. Covers to these and extra reprints will be furnished at net cost.

COPYRIGHT.—Matter appearing in PEDIATRICS is covered by copyright, but usually no objection will be made to the reproduction of anything appearing in its columns if the author's consent is obtained and proper credit is given.

PUBLISHER'S ANNOUNCEMENT.

ABDOMINAL APPLICATIONS IN TYPHOID FEVER.

Success in handling a case of typhoid fever may be likened unto the steering of a ship, already in distress, through a dangerous rocky channel. Results depend upon the man whose hand is on the wheel. Lucky be the typhoid fever patient in the hands of a cool, common sense doctor. It is this sort of a physician who guides his patient through the tortuous, rocky channel of typhoid fever and finally brings him into a safe port.

The many-sidedness of typhoid fever gives it a large interest and calls for good judgment. What to do and when to do it, are questions largely determining a physician's success in this infection. The bowels are inflamed, the Peyer's patches being the foci of inflammation, and it is but the application of common sense principles to seek for some means of combatting this intestinal inflammation.

Local applications prove efficacious elsewhere in inflammation—why not here? Applications with hygroscopic properties reduce inflammations in other tissues of the body and will do likewise in typhoid fever. The best of these is Antiphlogistine and its use in typhoid fever is demonstrable. It will tend to reduce the inflammation and thus contribute in making the typhoid patient comfortable and assist him in his return to health.

Antiphlogistine is applied over the abdomen to the thickness of an eighth of an inch and then covered with a suitable soft cloth. This is renewed twice daily.

This use of Antiphogistine is a valuable adjunct in the usual treatment of typhoid fever and is of distinct assistance.—Medical Era.

MEASLES.—BY BURTON BOHANNON, M. D.

Since the beginning of the winter months, about December 1st up until the present time, I have treated over seventy cases of measles in the hospital. Out of this number about thirty per cent. manifested severe catarrhal conditions while probably ten per cent. were malignant conditions. Out of the total number of cases the percentage of deaths was about four per cent. and this four per cent. represented those cases of strumous diathesis or severe glandular conditions followed by malignancy.

Measles as a rule, under proper hygienic surroundings and without complications, is a condition not to be feared by the medical profession or even by the laity, but when accompanied by severe catarrhal manifestations or glandular affection or followed by some lung or bowel trouble it is no longer a simple condition but one which needs immediate attention.

Speaking of local treatment, I find that Glyco-Thymoline and water, equal parts of each, or occasionally one part Glyco-Thymoline to two parts water used as a spray for mouth, throat and nose is very beneficial, not in the same manner as peroxide of hydrogen, but as a healer of mucous membranes. If the catarrhal conditions extend down into the bowels, I either use Glyco-Thymoline internally or in enema and have found it excellent, I attribute a great deal of my success in these seventy cases of measles to the free and liberal use of Glyco-Thymoline. Its pleasant taste and special adaptation to mucous membranes and inflammatory surfaces, should find it a permanent home in every hospital.—St. Louis Children's Hospital.

EATING TOO MUCH AND TOO OFTEN.

A great many people seem to think that it matters little what kind ofmaterial goes into the building of the human structure!

They offer the body thistles and ask it to give back figs.

They feed on thorns and expect to pick roses.

Later, they find they have sown indigestion and are reaping ptomaines.

It's a wonderful laboratory, this human body. But it can't prevent the formation of deadly poisons within its very being.

Indeed, the alimentary tract may be regarded as one great laboratory for the manufacture of dangerous substances. Biliousness is a forcible illustration of the formation and the absorption of poisons, due largely to an excessive proteid diet. The nervous symptoms of the dyspeptic are often but the physiological demonstrations of putrefactive alkaloids.

In order to carry out the important command, "Keep the Bowels Open," we are offered laxativ.e antikamnia and quinine tablets, the laxative dose of which is one or two tablets, every two or three hours, as indicated. When a cathartic is desired, administer the tablets as directed and follow with a saline draught the next morning, before breakfast. This will hasten peristaltic action and assist in removing, at once, the accumulated fecal matter.

PUBLISHER'S NOTICE.

A GOOD REMEDY.

(From the *New York Medical Journal,* Nov. 21st, 1908.)

Pa-pay-ans Bell was introduced to New England physicians in 1897. Its use has increased to an annual sale of over three hundred million tablets. It is prescribed by the professor of clinical medicine in Bellevue Hospital Medical College, the professor of gynaecological surgery of Johns Hopkins University, and by many other prominent physicians. A trial will prove Pa-pay-ans Bell better than pepsin, pancreatin or diastase, as it unmistakably removes the symptoms of indigestion and restores the digestive tract to a normal condition. Bell & Company prove this to physicians who allow them to deliver, at no expense or obligation on their part, two hundred of these tablets —enough for a thorough trial and enough to convince them that Pa-pay-ans Bell is the best antidyspeptic at their command. The tablets are stocked by all druggists—in original bottles of one hundred each—at seventy-five cents. The dose is two tablets—with water—before meals, for peptic indigestion; and two hours after eating for intestinal disorders. For trial packages address Bell & Company (Inc.), Orangeburg, New York.

DEFECTIVE NUTRITION.

" In cases of defective nutrition, when pallor, loss of strength, and perhaps, emaciation occur, Cod-liver Oil is often of great service."

EMULSION CLOFTLIN

Palatable, dependable, efficient, contains the full nutritive value of fifty per cent purest Cod-liver Oil, combined with the tissue-salts Lime and Manganese and C. P. Glycerine.

℞ Emulsum Olei Morrhuae
(CLOFTLIN)

See—"New and Non-Official Remedies"—Page 44, 3rd Edition.

In all conditions needing the blood replenishing and nutrient virtues of the whole oil, it can be relied upon to do the work.

Samples and Literature Free.

THE CLOFTLIN CHEMICAL CO.,
75-77 Cliff Street, N. Y.

Folding Nursery Seat

" Folding Nursery Seat " for the use ot children away from home. It weighs but two ounces, folds up into a small bundle 11 inches long. It is strong enough to bear the weight of a heavy child but is soft and warm. Do not place your baby over the large seat of the toilet, but use the

FOLDING NURSERY SEAT

Sent prepaid on receipt of
$1.00

It also comes in size for adults for 25c extra. Indispensable for women traveling

M. W. Redmond
934 Stirling Place, Brooklyn